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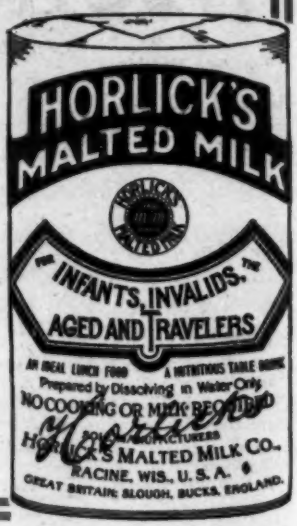
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VOL. XXXIV CHICAGO, ILL., SEPTEMBER, 1918 NO. 3

Original Articles

THE PRACTICE OF PREVENTIVE MEDICINE.*

WILLIAM S. SADLER, M. D.

Professor of Physiologic Therapeutics, The Post Graduate Medical School of Chicago; Director, The Chicago Therapeutic Institute.

CHICAGO

For more than two decades, as a profession, we have been preaching the benefits of preventive medicine. That both our patients and the general public have greatly benefited by our hygienic teaching and our scientific efforts to prevent disease and promote health, no one will question. Notwithstanding the good we have accomplished along these lines, it seems to me that we have not always followed up our educational efforts in a practical and logical manner; that we have not done our full duty in helping the layman to preserve his health and to postpone his own funeral.

Popular Health Instruction. I am keenly appreciative of the great advancement made during the past ten years in providing improved hygienic instruction for the laity. I refer to the increased efforts along the lines of enlarging and improving the popular health literature. Today, reputable physicians contribute to the popular magazines and even to the columns of the daily newspapers; not to mention public health lectures; the increasing activity and efficiency of public health boards; the anti-tuberculosis organizations; infant welfare societies, etc.; but all these activities, it must be admitted, are not, technically speaking, the *practice* of preventive medicine as regards the average individual in the community; as far as he is concerned, these worthy efforts rather represent the *preaching* of preventive medicine.

It is the purpose of this paper to call attention to a long neglected phase of the modern health movement, a field which I believe might appropriately be termed the "practice of preventive medicine." I refer to the systematic and well organized efforts periodically to examine apparently well persons, and otherwise to supervise the health and physical well-being of the families embraced in our clientele; to still further extend our health instruction designed for the general public along such lines as will emphasize to the layman the necessity and importance of the continuous and thoroughgoing health supervision of every individual in the community from the time they reach the high school graduating age; it being assumed that the school age period will be covered by the joint watchfulness of parents, the family physician and the public school nurse.

And since this paper deals not so much with the theory, but rather with the practice, of preventive medicine, it will be evident that our purpose can best be served by a presentation of actual accomplishments in this direction rather than take up your time with the presentation of untried methods and unproved proposals. This paper will, therefore, be quite largely devoted to a description of our efforts and a relation of our experiences covering a period of ten years, and dealing with our endeavors to practice preventive medicine, to organize and put into operation a system of periodic health examinations for supposedly well people.

I should add, by way of further explanation, that the facilities and organization developed and built up for the accomplishment of this work, were primarily created for accommodation of our regular medical work, and not for the special purpose of carrying on the examination of well people. Lack of interest in the practice of "preventive medicine," both on the part of the profession and the public, would have made it financially impossible to have maintained an organization with such a large annual overhead, devoted exclusively to the examination of well people; for,

*Read at the sixty-eighth annual meeting of the Illinois State Medical Society, at Springfield, May 22, 1918.

even after ten years of persistent effort, the volume of business embraced in the department of so-called "Health Audits" only represents about 25 per cent of the total number of examinations made.

Periodic Health Supervision. The awakening on the part of the public has only come in the last four or five years. The layman is learning to go to the dentist once a year, and the time is now ripe for teaching him how to get in touch with his physician at least once a year. I have been shocked by the general indifference of the profession to the importance of this work. Many well persons come to us to undergo the health audit and describe how they have patiently gone to from three to six physicians successively, and how they have failed to interest these doctors in their case, simply because they presented no definite ailment—no precise complaint.

I regard it as exceedingly unfortunate that the supposedly well layman should get out of touch with the family medical adviser in his efforts to preserve health and prevent disease. In other words, while I recognize the place and function of special organizations for carrying on elaborate researches and thoroughgoing examinations, I believe that it would be a better plan to have the annual check-up examinations and the follow-up system carried out by a private practitioner, preferably the family physician.

A health audit—as we here employ the term—may be defined as a regular, systematic and searching medical examination of an apparently perfectly well and healthy man or woman. As a rule people go to see a doctor only when they are sick or suffering. Years ago, people patronized the dentist when they had the toothache; now, you go to the dentist regularly—periodically. Now-a-days some folks are learning that it pays to call on the doctor at least once a year, to have their vital machinery inspected and overhauled—and not wait for some painful manifestation to put in its appearance before calling in medical assistance. For years we have been preaching that "prevention is better than cure," and now the "Health Audit" idea is a serious attempt actually to put this good advice into practice.

The one prominent characteristic of our present-day social and commercial life is its high tension. In this twentieth century most people are living under high pressure and traveling through life at a fierce pace. The pressure gauge of modern life registers all the while dangerously near the bursting point, and the unfortunate thing about it all is that the very diseases which are engendered by this high-pressure living are largely *symptomless;* that is, they frequently present no serious symptoms and occasion no personal suffering, until the patient is actually on the brink of the grave. Very often the first knowledge one has of serious organic defects is when they are turned down for life insurance; then they are rudely awakened to the fact that they may have but a few months or years to live; that they are already unconscious victims—in an advanced stage—of one or other of the so-called "old age" or degenerative diseases.

The Appalling Neglect of Health. No automobilist would dare to drive his machine forward heedlessly and carelessly with no thought of periodic inspection and without proper oiling and care at regular intervals, unless his journey were one actually of life and death; and yet how often do we observe intelligent men and women urging their body-machines forward heedlessly and carelessly under the lash of greed and ambition, utterly disregarding disease possibilities and utterly blind to the danger signals of disease which are to loom up so soon in the pathway of life just ahead.

The higher the speed, the more intensely you drive the human machine, the more the necessity that the bodily mechanism should be regularly inspected. Many a man thinks nothing of spending from twenty-five to one hundred dollars, periodically, for having his automobile overhauled and kept in first-class running order. At the same time, he is not willing to invest even half that amount in the all-important business of periodically inspecting and annually overhauling his own physical body—his nervous, digestive, circulatory and eliminative mechanisms.

In this country every year hundreds of thousands of dollars are spent to determine how bookkeepers, cashiers, and other confidential agents are doing their work, while next to nothing is spent by these very painstaking individuals—captains of industry and merchant princes—to find out how their own personal vital organs—lungs, liver, kidneys, heart, and blood vessels—are doing their vital work. You can discharge an incompetent

accountant, fire a dishonest bookkeeper and get reliable workers in their places when you discover their discrepancies, but it is not so with one's vital organs; when they go wrong it is often too late to secure very much help. We have but one set of vital machinery to run us a lifetime, and when, through neglect, it "goes stale," we have to make out with what we have left when we discover our mistake.

What do the intelligent men and women today, who are neglecting to find out about the workings and behavior of their vital mechanisms, think of the engineer who never inspected his machinery until he got word of a breakdown? What do you think of the business man who never audited his books until informed that his cashier had left for Canada? What is the situation of a nation that never prepares for war until hostilities break out; and what estimate can we put upon the intelligence and forethought of men and women who never have their body-machines inspected until a physical breakdown or a nervous blow-up hurries them into the hands of a doctor or off to a sanitarium?

Some day a coroner's inquest will be held when anybody dies under fifty years of age.

How The Health Audit Is Practiced. When a man or woman reaches the age of twenty-five or thirty years, they should submit themselves to a searching health audit, having this complete research repeated about every five years from that time on; while annually they should have this examination checked up at points that may be indicated, together with such simple tests as blood examination, urinalysis, and blood-pressure. In cases where blood-pressure or urine is off-color, it might be well to check them up every three or six months until they show improvement.

It should be remembered that Bright's disease, apoplexy, heart failure, nervous prostration, diabetes, and many other physical and nervous disorders which contribute so enormously to the modern death rate and which so appallingly cripple the efficiency of the civilized races—I say, it should be remembered that these disorders usually cast their warning shadows a long way ahead of the actual cataclysm. While these diseases are largely *symptomless* as far as the patient's ability to detect them goes; nevertheless to the physician, they hang out red lanterns of warning which would never be overlooked by this plan of systematic and periodic physical audits or annual health examinations.

In our larger cities organizations are being built up, with each department in the hands of a specialist, to carry on this work of the health audit, and, no doubt, at some time in the near future, the business man who desires a heavy line of personal credit at some financial institution will be compelled to submit, along with his other statements, a physical auditor's report dealing with his vital assets.

The facts discovered by a modern health audit enable you to know where you are weak and where you are strong; where it is safe for you to drive hard and push forward, and where it is wiser to put on the brakes and go more slowly; while at the same time the way is pointed out for you while it is yet possible to remedy conditions—to strengthen your weak points and build up your defenses where danger threatens.

In this connection I want to say a word concerning the criticism which has come from some quarters regarding the harmfulness of supposedly well people periodically visiting a physician or medical institution for the purpose of being examined. I am not wholly blind to the danger of introspection on the part of certain nervous individuals, and I am also cognizant of the fact that every now and then some neurasthenic individual is not particularly helped by going through such a thoroughgoing examination. At the same time, I have further observed that these are the same individuals who, sooner or later, succeed in making themselves sick by reading health books or health articles in the magazines, or by following the health column of some daily newspaper. They are hereditarily and neurologically unstable. They are potentially neurasthenic and hardly belong in the category of well people. I do not recall in my experiences a single case of periodic examination where even a passingly well person was rendered introspective as a result of the plan and methods herein described and advocated.

Amazing Disclosures. It is a sad commentary both on the intelligence of the public and upon the aggressiveness of the medical profession, to ascertain how many persons in a given community, thinking themselves perfectly well, are found on examination to be suffering from some minor deficiency or major disorder.

Our statistics developed by the examination of well persons are almost identical with those brought out by the numerous "health surveys" and by the recent examination of the employes of the New York Health Department; all of which findings agree almost exactly with the statistical reports of such organizations as the Life Extension Institute of New York City and the Chicago Bureau of Health Audits—institutions devoted exclusively to the examination of well people. All of these investigations taken together, show that supposedly well people in the average community, when examined, yield the following amazing results:

The examination of several thousand supposedly healthy individuals (average age 30 years) employed in banks, insurance offices, factories, mercantile establishments and other industrial concerns, discloses the amazing fact that only 4 per cent are normal; 36 per cent exhibited minor tendencies toward disease; 50 per cent showed from moderate to severe symptoms of approaching disease; while 10 per cent were found to be already suffering from some serious or advanced physical ailment.

Between 1914 and 1917 the examining surgeons at the various United States army recruiting offices rejected 77 per cent out of 205,281 applicants for the army. So it appears that just about three-fourths of all applicants were below physical standards; and, as the reader will recall, quite recently, since definitely entering the war, these standards have been greatly lowered; but even then, one-quarter of all the men examined have been rejected.

After going to the mobilization camps the men of our recent draft army were all re-examined and 30,000 more were rejected. One-fourth of these were found afflicted with bad eyesight; 8½ per cent had bad teeth; and still other troubles revealed by the second examination were hernia, ear troubles, heart disease, tuberculosis, mental deficiencies, venereal diseases and a lot of other common, but unsuspected, disorders; all of which had been overlooked by the local examiners.

But this is the important question which we as physicians will ask ourselves: If the men of this country between twenty-one and thirty-one years of age are in this bad condition, the women must be in an equally deplorable condition, or probably worse; and if these select individuals, candidates for the army and the national defense, are thus afflicted, what must be the real condition of the average American man and woman of today? It is self-evident that this army examination data calls for the immediate institution of the annual examination habit on the part of the American people. I repeat: The layman must be educated to go to his doctor at least once a year.

"Symptomless Diseases." Practically all of the contagious or microbic diseases at the present time are on the decrease, and their death rates are gradually going down. Modern science is slowly gaining the victory over the microbe; but in the presence of this wonderful achievement, we stand face to face with defeat as regards the struggle with the degenerative or so-called old age diseases. There are two probable causes for the poor showing in this field. These diseases are in part being produced by personal habits of living—conditions which cannot be controlled by sanitary laws and quarantine regulations. Most of these degenerative diseases are largely *symptomless.*

This group of symptomless diseases embraces: Hardening of the arteries, with its resultant high blood pressure; cirrhosis of the liver; Bright's disease and kidney disorders; apoplexy, paralysis, etc.; heart failure; diabetes; cancer; tuberculosis; locomotor ataxia; and certain other nervous diseases which are also often more or less symptomless.

Disease statistics cannot always be taken at their face value; for instance, we can prove by statistics that the American people will all be crazy in less than three hundred years, but I don't believe it. This deception of statistics is due to the fact that we are more critical in our diagnoses and more discerning in our classification than we used to be. We call a lot of people crazy nowadays who used to be regarded as being merely "peculiar"; and so statistics sometimes look unduly threatening.

Nevertheless, after making all due allowance for more complete diagnostication, etc., we are forced to the conclusion that these old age disorders, or symptomless diseases, are greatly on the increase at the present time. During the past ten years there has been an alarming increase in the death rate of heart disease, arteriosclerosis, Bright's disease, diabetes, etc. During the past

twenty-five or thirty years the mortality rate from this group has nearly doubled. Of hundreds of thousands of American lives that are thus annually snuffed out, nearly one-half die before their time. While men above sixty or seventy may be said to succumb to these disorders normally, our statistics go to show that men and women under sixty years of age make up almost 50 per cent of these fatalities. And all of these diseases, it should be remembered, are more or less preventable—that is, death could have been postponed for many years in almost every case if the facts had been known in time and proper action had been taken.

Since the European war began, America has been deprived of about one million immigrants a year, and this is just about the annual number of our needless deaths. In round numbers, a million American lives are sacrificed every year, and this takes no account of the enormous waste—running into billions of dollars—which the nation sustains because of the lessened efficiency due to the preventable sickness of those millions of sufferers who survive. And all of this is brought about because these disorders are so largely symptomless that the only way their presence could have been detected would have been by the systematic methods of the annual medical examination. I fear we shall never see a material lessening of the death rate of these symptomless diseases until the American people form the habit of consulting the family physician once a year for the annual health inventory; for, of these million useless deaths each year, about one-half are from these preventable old age disorders. Over one hundred thousand die of these degenerative diseases before reaching sixty years of age. About seventy-five thousand die before they are fifty years old, and almost fifty thousand perish of "old age" ailments before they are forty years old.

Heart Disease and Kidney Disorders. Heart disorders are tremendously on the increase at the present time. "The three diseases most fatal in the United States, according to the Federal Census Bureau, are heart disease, tuberculosis and pneumonia. These three diseases cause nearly one-third of all deaths occurring in the country. At one time tuberculosis headed the list and pneumonia ranked low. Heart disease ranked fourth as a cause of death from 1900 to 1910. Within thirty years it rose from ninth place to fourth place. Now it is in first place." The deaths from heart disease in the registration area in 1916 numbered 114,171, or 199.4 per 100,000 population. The death rate from this cause shows a marked increase as compared with 1900, when it was only 123.1 per 100,000.

The kidneys, we know, seldom give us pain unless they are harboring a stone or tumor of some sort. On the other hand, one can be in almost the last stages of Bright's disease and never experience a pain or a pang from the kidney region. In fact, most pains in the small of the back have no connection with the kidneys; they are lumbago or nerves—or come from carrying around too much fat on the abdomen. Kidney disorders are early detected by urine examinations and blood-pressure findings, as illustrated by the following case:

Mr. W. W. G.—In apparent good health. Before assuming important business responsibilities was audited. Blood pressure high, with albumen in urine. By placing himself in the hands of his physician and adopting a careful regime, he was able to accomplish a practical cure within a year.

On the other hand, here is an illustrative case of a man who was looked upon by his friends as being "the picture of health." He took the health audit as a sort of joke.

Mr. C. P. K.—Business man, 43 years old. Feeling fine, but took the health audit to be sure. Blood pressure 180, casts and albumen in urine; advanced Bright's disease. Disregarded advice to quit work and take radical measures to improve his condition. Six months later had stroke of apoplexy and in two weeks died. Even in this grave case he "thought he was all right." If he had been thoroughly audited when thirty or thirty-five years old and had followed this up with frequent checkings, taking the advice of his physician as to treatment, he might have lived to a good old age.

These are common experiences. Dozens of such cases can be cited by any practicing physician of large experience. The time has now come to put preventive medicine into practice and save thousands of these needless and premature losses every year.

The Machinery for Measuring Men. The organization of physicians and facilities for effectively carrying out the health audit idea which are to be found in this country fall in two groups:

First, those of the larger sanitariums and hospitals, scattered throughout the country; and

Second, those special medical organizations such as may be found in New York, Chicago

and other large centers, where men and methods have been assembled in practical working groups, for the specific purpose of putting into practice this "Modern Health Audit Idea."

You will perhaps get the best idea of such an organization by an actual description of the facilities of such an establishment. There are to be found, of course, the usual waiting room, administration offices, etc., such as might be found in any medical institution; and then there are a series of examination rooms, where the special examinations are made, and the clinical laboratories where the microscopical, chemical and other special technical work is carried on. There are complete x-ray laboratories for making all sorts of observations, and carrying through every sort of x-ray examination. Next come the dental department and laboratories where the dental surgeons make a careful examination of every tooth, the gums, take x-ray pictures of the roots of the teeth, etc.

Next you go into the psychological laboratory, where tests are made of the nervous system and where the mental action and the nervous behavior are observed. This represents one of the latest developments in methods of precision in reference to a thorough-going examination. Then there is the anthropological laboratory where the physical measurements are made, and where the strength tests are recorded.

Next comes the laboratory of special observations. The lung tests, collection of air for CO_2 determination, and a great variety of other observations, including blood pressure, etc. Then come the special departments for the examination of the eye, ear, nose and throat, and other special organs; not to mention the usual gynecologic, genito-urinary and physical examination departments.

It thus appears that the technical and mechanical organization of such an establishment employs all the equipment and facilities such as would be found in one of the larger medical establishments of the country; it is the bringing together in one organization of the facilities and equipment that would otherwise be accessible only by the great inconvenience of visiting, successively, a series of twelve or fifteen different examining specialists.

Medical Team-Work. The health audit idea presupposes team-work on the part of the members of the examining staff. While each examiner or specialist in his department attacks the proposition just as if the difficulties to be discovered in that particular department represented the entirety of the problem; subsequently, there is a consultation with the other departments, regarding the actual diseases disclosed, and in the end the findings are all assembled in the office of the medical director, who is responsible for corelating and harmonizing the final interpretation of the findings of the various departments. In this way a patient is able to get a co-ordinated diagnosis, prognosis and opinion.

This sort of an examining staff demands presence of the internist, the surgeon, the gynecologist, the genito-urinary specialist, the eye, ear, nose and throat doctor, special laboratory workers, the roentgenologist, the psychologist, the dietician, the dental surgeon, and last, but not least, a medical director or the diagnostic chief of the entire examining staff.

Even in the smaller communities, county seat towns, etc., medical men could group themselves together for this diagnostic team-work. Especially is such a plan feasible in those towns which have a small hospital, which could serve as the nucleus for this new sort of clinic. At the same time, if these hospitals could be properly equipped for the administration of hydrotherapy and other physical methods of treatment, there would not be so much in the community left for the osteopath and the chiropractor. In brief, when the medical profession wakes up to the value of teamwork in diagnosis and to the practice of psychotherapy in the neuroses, it may be that the man of medicine will begin to come back into his own. As it is now, the family medical adviser is rapidly coming to the place where he refers his surgery to the surgeon; his difficult diagnostic work to special establishments; his chronis cases to the osteopath or a sanitarium (or perhaps they go of their own accord if he does not send them); while in the case of nervous disorders he, as a rule, does not have the privilege of referring them, they more frequently take up New Thought or Christian Science on their own initiative.

I am strongly impressed with the necessity of providing in our future hospitals, not only proper facilities for physiologic therapeutics and other treatment outside of surgery; but also to plan for this hospital to become the diagnostic and re-

search center for the community. In a small community this plan can be worked out, I believe, in some practical way.

These small hospitals of the future should be the meeting places for the local medical societies and headquarters for the continuous post-graduate work of the local profession. There exists today an imperative necessity for the so-called regular profession getting together to promote team-work, and professional loyalty, or else we are doomed to still further harassment at the hands of the irregular practitioner and the divers cultists.

The accompanying exhibits show fully the scope and detail of our plan of research examinations; the nature of the reports rendered; variety of examinations offered and the thoroughness with which well people (as well as sick people) must be overhauled in order to gain possible clews of constitutional defects or threatened disorders of any sort.

Notwithstanding its inherent limitations, we have found the graphic method very helpful in the study of examination findings and it is employed throughout our scheme of examination reports as supplemental to the accompanying technical and formal written reports.

Of course, the fee charged for these examinations would ordinarily be placed on a definite basis; but our own personal practice has been to establish a minimum fee based on overhead and material costs and then to graduate the charges upward towards an established maximum charge, in acordance with the circumstances of the patient, somewhat after the same manner we would follow in settling an equitable fee for a proposed surgical operation.

DISCUSSION (ABSTRACT)

Dr. Hemenway (Evanston) was much impressed with the absolute necessity as well as the economic importance of such examinations. The estimate for the United States in 1914 was that the loss from malaria was $178,000,000. He made a recent estimate for the state of Illinois on malaria, which was approximately $4,500,000.

If the individual practitioners make routine microscopic examination of the blood, especially with the least possible suggestion on the part of the patient, the cases may be discovered, and in that way the disease may be prevented from spreading.

It is important on that account for the community that these examinations be made, and if the genral practitioners do not take it up as a routine practice, it devolves upon the governmental authorities to make these examinations and take charge practically of the treatment and the practitioners will be left out in the cold.

In many of the southern counties of the state the men do not show energy in the cultivation of their land. A few dollars spent on the examination and a little bit of treatment would enable them to get a great deal more out of their land and be a great deal more prosperous. It is therefore a matter of personal economy to have these examinations.

Doctor Sadler has spoken of arteriosclerosis.

Now, with the blood you have a retarding of the pressure in the capillaries. That retarding of the pressure reacts, and you get hypertrophy of the heart, increased heart action, not as a cause, but as a result, and with the retarding effect in the capillaries of viscosity and the increased heart pressure, you next get the hardening of the blood-vessels as a result and not as a cause of the disease. So you can detect the coming of arteriosclerosis before it actually occurs.

He also noted the lack of laboratory facilities in several of the southern counties of the state.

If the men are going to hold their business they have got to be prepared to make a thorough examination, and they must have their laboratories available in the various communities.

Dr. John Dill Robertson (Chicago): I thought no one questioned the correctness of the plans outlined by Dr. Sadler. We have heard this plan discussed for a good many years. But, in spite of that, the people are very slow to adopt it. It should be made a habit, and the way to begin the habit is in childhood. That leads back to school inspection and school examination. If every school child in every school-house in every city and in every hamlet had a health audit each year from the first year they enter school, and it was kept up until they left the grammar school, eight successive years, then the habit would be formed and they would be demanding a careful physical examination in the years to follow.

The Health Department of the City of Chicago started some time ago to make such audits of the school children of Chicago, though not so extensively nor so completely as has been outlined by Dr. Sadler, because the audit had to be made by one individual and he had to do it rapidly. In 1916 there were 191,000 school children examined physically. Of this number, 88,000 were found to be defective. A large percentage of these were teeth, a large number tonsils and adenoids.

Out of those 88,000 that year there were only 12,000 whose defects were corrected. The correction of these defects is the most difficult part in our school and inspection work. After we have discovered the condition, we must then get action on the part of the family—and the family physician. With the children in the schools of Chicago many of them were so poor they couldn't afford a physician. Surely, an ounce of prevention is worth a pound of cure, and surely

the quicker this audit is made on the child, the fewer defects there will be in mature age.

In reference to the control of contagious diseases, we have a long way to go in the control of tuberculosis and syphilis.

POSTPONING OLD AGE*

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The postponement of old age is accomplished by the conservation of good health and the promotion of normal life. It is a dividend paid on an investment in conservation of the vital forces and organs; this dividend is increased by the elimination or amelioration of unfavorable environmental conditions. This includes questions of water supply, food, feeding, sewerage, climatology, clothing, heating, lighting, ventilation, scavenging, personal hygiene, work, over-work, sleep, rest, fatigue, exercise, play, sports, noise, crowding and over-crowding, avoiding offensive, unwholesome or dangerous trades.

In order to avoid disease and to forestall its effect, there are required: first, mechanisms as capable as possible of adjustment to external relations unfavorable as well as favorable; second, environment (external relations) to which the mechanism may adjust itself by making as small demand as possible upon its powers of adjustment. Of the two factors mentioned the former is far the less under our control. The mechanism may be strengthened by good air, rest and other favorable conditions. It may be weakened by bad air, fatigue and other unfavorable conditions.

In actual life all these various conditions are readily observed. We find some persons so robust, that is to say, with mechanism so capable of adjustment to external relations of whatever kind, that nothing seems to daunt them. They work hard, eat poor foods, live in bad air, and seemingly disobey all rules of hygienic living, and yet possess apparently perfect health. Conversely others, surrounded by every sanitary contrivance, well fed, well housed and tenderly cared for, sicken and die in an environment apparently the most favorable. In the same community are many who thrive as long as their external relations are good and easily dealt with, but who suffer just as soon as these become difficult to deal with. A good example of this is a change of external relations, such as a financial panic, loss of employment, increased exposure, poorer feeding, loss of sleep, etc. Perhaps the best example is one in which a novel and direct action proceeds from the environment, unknown it may be until its work is done.

Darwin refers in sorrow to those persons who have failed to understand him, because they were utterly unable to appreciate the cumulative effects of small changes acting over long periods of time. As physicians we must warn our patients not to neglect small and seemingly insignificant factors in the form of unfavorable conditions which, by prolonged action and cumulative effects, may produce grave results.

The period of life may be divided into youth, adult life and old age. Only very rarely does the mechanism last longer than a century; usually long before this it is stopped by death, which may have marked the end of life at birth or even before it; in infancy, in childhood, in maturity or in old age. The period of growth and the period of decline, infancy and old age, appear to be the periods when death is least successfully resisted. In this last respect the two extremes of life resemble one another, the freshly lighted taper and that which is burned down to the socket, are both easily extinguished.

Doubtless the principal cause of death should be old age, the natural maturity of the organism, the gradual and irreparable wearing out of the vital machinery; yet if we turn to any work on vital statistics, we find far more prominence given to other factors of mortality. In Chicago, for instance, we find deaths from disease causing 92 per cent, violence 7 per cent, and old age, which is classified along with ill-defined or unknown causes, and all comprising a total of 0.6 per cent, showing that disease constitutes 99 per cent of all the recognized causes of death. It is clear, therefore, that old age, which should be the natural cause of death, is comparatively rare. If disease is thus in reality as it is apparently the principal agent of death, it is obviously on the prevention of disease that we must concentrate our efforts in the future.

While it has been shown that disease is the principal agent of death, we must also bear in

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mind that it is often facilitated in its work by age or enfeeblement which gives it a foothold and incapacitates the organism for resisting its activity.

Physicians recognize differences of condition in which the body seems to possess great powers of resistance or endurance or only small powers of desistance or endurance. In this way it often happens that a structural or constitutional condition, as for example a low degree of vitality, is generally believed to increase enormously the susceptibility to disease. A little reflection will show that death as a rule comes prematurely; old age the only theoretically normal and natural cause of death is very rarely the one and only cause. Poor timber or poor materials or poor construction of the living machinery alone, or together, make up a poor constitution or else violence, poison, parasites or other unfavorable elements in the environment, usually bring on disease and death long before the appointed three score years and ten. For the great majority death comes before old age. All this means that death is often premature and the principal function of the physician is the prevention of premature deaths.

That life, that narrow isthmus 'twixt two boundless oceans, the past, and the future, should be held together more tenaciously than is being done at present is illustrated by the following:

Between three and four hundred thousand people in the United States in 1917 died of the so-called degenerative diseases—the incontrovertible evidence staring us in the face that half of these would not die if the average health, from middle age upward, was as good as it was thirty years ago, notwithstanding the increase in the general average of human longevity.

One hundred and fifty thousand die in this land each year of tuberculosis, a large proportion of them at the age of greatest value to the community.

Eight hundred thousand children and adults in the United States each year fall fatal victims to communicable diseases.

Five hundred thousand deaths each year occur among children because of the practice of "letting all of them catch whooping cough, measles" and other contagious diseases.

The ill they did was not buried with their bones, because there are five million others sick as a result of the scarlatina, measles, mumps and other infections which the half million helped to spread.

Thirteen and a half million wage earners are laid up for repairs each year without earning power because of so-called industrial sickness; eighty-five thousand deaths occur among these, traceable to accidents which are really due to the carelessness, inattention, fatigue and illness of those who must attempt to work or starve.

Seven hundred thousand others fall victims to four weeks or more disability from factory injuries which the application of the knowledge we have would almost wholly prevent.

The postponement and banishment of old age has been the dream of mankind for thousands of years. The old-time alchemists spent many long, toilsome days in fruitless search for the philosopher's stone, which it was confidently believed would transform the old man into youth..

When does the average individual begin to grow old?

"How long can the execution of this death sentence be postponed?" This question was in effect answered three thousand years ago when the psalmist said, "The days of our years are three score years and ten." Physiologists are agreed that the age limit should more nearly approximate the century mark than the biblical "three score and ten."

Let us study existing conditions for a moment and see if either doctrine holds good at the present time.

In 1870 in Chicago the expectation of life at the time of birth was thirteen years, and in 1910 it was thirty-five years, an addition of twenty-two years, or 170 per cent, increase to the average person. The following table shows the decrease and increase of mortality by age periods sice 1880 in the registration area:

Under 20, decrease	17 per cent
20 to 30, decrease	11.8 per cent
30 to 40, decrease	2.3 per cent
40 to 50, increase	13.2 per cent
50 to 60, increase	29.2 per cent
Over 60, increase	26.4 per cent

The United States mortality statistics show that the general death rate in the United States registration area declined 24 per cent from 1880 to 1909; that in people below forty years of age the decrease was 17.2 per cent and that in people about forty years of age it increased 26.8 per cent.

Further analysis shows that the decline in the general death rate occurred chiefly in the diseases of children and early adult life and came wholly from diseases of the communicable class.

Degenerative Diseases

Taking the whole list of degenerative diseases, so as to avoid inaccuracy in tabulation and classification for the thirty years, 1880 to 1909, as reported in the registration area, it shows an increase of 104 per cent (that is for affections of the heart, blood vessels, kidneys, etc.). Of interest in this connection is the percentage of increase due to degenerative changes by age periods since 1880, as follows:

Below 20, increase.....17 per cent
20 to 30, increase.....33 per cent
30 to 40, increase.....32 per cent
40 to 50, increase.....60 per cent
50 to 60, increase.....94 per cent
60 and over, increase.....92 per cent

The very heavy increase in the mortality from degenerative diseases during the most productive years of life, amounting to 60 per cent, between the ages of 40 and 50, illustrates the degree of life strain that affects our people; it shows also that the increase does not fall solely among the aged, but reflects a deplorable and unnecessary loss among those in the prime of life.

The loss of life in the United States from degenerative diseases based upon registration records is 307,413 for the single year 1915, and for the ten-year period from 1900 to 1909, 2,882,112; on the same basis the complete loss of life from 1910 to 1920 due to degenerative diseases will be 4,167,739. Half of these would not die if the average health from middle life upward was as good as it was thirty years ago.

The following diseases are deserving of detailed consideration, namely: Cancer, Bright's Disease, and Diabetes.

Cancer. The death rate from cancer in the registration states for thirty years, 1880 to 1910, shows an increase of 104 per cent; 67 per cent of this increase occurred between the ages of 40 and 60 years. The average age at death from cancer was 59 years; but 83 per cent of the deaths for five years, 1906 to 1909, occurred above 45 years of age.

In Massachusetts, New Jersey and in sixteen American cities, the government report indicates an increased mortality from cancer of 100 per cent in the past three decades.

The cancer death rate in the registration areas of United States in 1911 per 10,000 population was 0.78; in England and Wales, 0.97; the highest rate was in Vermont, 10.1; the highest city was Albany, 12.3; in the colored population it was but 5.7 per 10,000 living.

While cancer has increased in younger ages, its greatest advance has been in middle life and old age. In ten states, 1901 to 1911, it increased as follows:

Age 45 to 54.....14 per cent
Age 55 to 64.....31 per cent
Age 75 and over.....45 per cent

Combining all ages for the ten-year period, 1901 to 1910, the increase in the male cancer was 29 per cent, and in the female 23 per cent; in other words the number dying from cancer at the present time is about 25 per cent greater than ten years ago.

In the absence of any knowledge as to the specific cause of cancer, its non-preventibility seems to be taken for granted by the public, and even by many physicians. Probably one-fourth of the death rate of this malignant disease is due to the ignorance or neglect of its early manifestations and another fourth to procrastination in seeking surgical relief after the disease is positively recognized.

Bright's disease, so-called, is a disease of civilization. They advance together. Its etiology is related to food, sedentary occupations, strong drink, close confinement and mental strain. In short, it is caused, as a rule, by improper living habits. The terrific increase in the mortality from nephritis is indicated wherever comparative statistics are found; for instance, in Chicago in ten years it increased 47 per cent*; in Memphis, 50 per cent; in Richmond, 106 per cent; and in New York, 132 per cent. In the registration area this death rate was highest in New York, 132.0, and lowest in Montana, 52.0. In the registration area in 1911 the death rate among the whites per 10,000 was 9.43, and among the colored, 17.04; in the cities the rate was 11.27; in the rural sections, 7.50; in the registration area, 82 per cent of the deaths from kidney disease was among people about age 40.

*In 1907 it reached a maximum of 12.19 per 10,000 population, which has gradually declined to 8.39 in 1917.

Diabetes. While the definite causative factor still is obscure, research directed in the field of chemistry of metabolism has done much towards checking the course of the disease especially in early cases.

The statistics so far presented show the increase and decrease in the death rate by ages. It shows that the average length of life has advanced and that the extreme span of life has been materially shortened and shows conclusively that the death rate has materially decreased, for all age periods under forty years and progressively increased for all age periods over forty years. Showing that as one class of diseases is conquered another takes its place—that the diseases we are conquering are the self-limiting type and that the diseases that are on the increase are those of the degenerative class.

Let us now proceed to discuss the factors which are believed in a large measure to be responsible for present day conditions.

There are some who believe that the increase in the death rate after middle life is due to the saving of lives in the younger ages, that many of these lives pass into the older periods with weakened power of resistance. It is true that a large proportion of our city babies died only a few years ago and that we now save them, but it remains to be seen whether they grow up with that vigor and physique which is necessary for efficiency. If we can form any judgment at all now, it is to the effect that we are only postponing the extinction of those types a generation or two. There is no question but what this feature will have a marked bearing on the future death rate for the periods above forty years, that it is not a factor at the present time in influencing the mortality for these periods is well illustrated in Chicago where the saving of infant mortality has been so recent that none of them have passed into the older age periods, yet, notwithstanding this, the death rate from degenerative diseases has increased by leaps and bounds for the last thirty years.

That conditions in life in earlier ages have an influence on later mortality is apparent. Heredity or the physical endowment at birth must be considered as a causative factor of degenerative diseases after middle life. Diseases of early infancy also have a bearing upon the question, for instance, heart disease, Bright's disease and impaired vitality are frequently sequels of acute infections of early life. How frequently do we see chronic nephritis following in the trail of scarlet fever and diseases of the heart and vascular system following as a result of so-called rheumatism, typhoid fever, etc. These impairments go on unnoticed until, under the stress of middle life they terminate in one or another of the degenerative diseases.

Occupation is one of the most important factors contributing to middle age mortality. The character of modern industry has completely changed in the last fifty years and we must consider the objective phases of occupation which are inseparable from present-day working conditions. The presence of large numbers of workmen under one roof brings about new and distinct problems of hygiene in industry; it raises the question of purity of the air supply, its temperature and humidity, the adequacy of natural and artificial light and many minor details which in their entirety markedly affect the health conditions of the workmen. We must also consider the factors of dusts, fumes and poisons which play a significant part in present day occupational mortality. That early occupation bears a relation to degenerative diseases after middle life is easily confirmed by the study of mortuary statistics which are all loaded with indication of occupational poisoning of some sort in early life.

Unmarried Adults. Another factor operating to increase mortality death rate is the number of unmarried people in excess of their proportion, to the marriageable population, namely, 17,000,000 unmarried people in the United States, divided as follows: 9,000,000 unmarried women above age 15; 8,102,000 unmarried men above age 20; 7,226,000 of these men are between ages of 20 and 44; 500,000 are between ages of 45 and 54. The mortality statistics of married and unmarried people is shown by the tabulation of Prof. Wilcox of Cornell University.

These statistics cover the population of the state of New York, excepting Buffalo and New York City.

Comparing the death rate of unmarried with that of married men, and of unmarried with that of married women, we get the following results:

Ages	Death Rate Unmarried Men	Death Rate Unmarried Women
20-29	57% greater	18% less
30-39	119% greater	17% greater
40-49	105% greater	22% greater
50-59	69% greater	37% greater
60-69	60% greater	32% greater
70-79	39% greater	34% greater

Why should the death rate of single men be so much higher than that of married men in the same age group? Why should the death rate of single women also be higher than that of wives? Above group 30 to 39 the death rate of husbands is greater than that of wives. Why is this so? These are problems well worthy of study. Lack of time prevents these considerations in this paper, but that it has a bearing on the death rate is quite apparent.

In passing, it is of interest to note that in general women live longer than men. The great common diseases such as tuberculosis, pneumonia and heart disease kill more men than women, not only in the community as a whole, but at any given age or in any given year.

The tiniest girl baby resists the infections and poor food diseases of infancy twenty-five per cent. better than her boy brothers and cousins. Women have a lower death rate from the acute infections than men have. They bear persistent and agonizing pain better, they stand the shock of surgical operations better; more of them survive to old age, and more than twice as many of them become centenarians.

The United States census report shows that from the very first month of the first year of life and for every successive year and decade following the death rate is higher in boys and men than in girls and women; that more women than men reach extreme old age and that there are in every community nearly 20 per cent. more women over seventy-five than there are men.

A study of the problem of the millions of surplus females in European countries reveals the fact that, although there were more boy babies born than girl babies, the girls, by their superior toughness and resisting power, showed a lower death rate at every age of life than the boys, and forged steadily ahead through each successive decade, until, long before middle life, they outnumber them heavily.

Neither American nor European statistics throw any clear light upon the question of the reason for the superior vitality and viability of women. First of all, is the explanation that women, living a more guarded, sheltered and indoor life than men, are less exposed to accidents, injuries, infections, to say nothing of battle, murder, etc. Statistics confirm this claim to the extent that something like four-fifths of all the victims of industrial and railroad accidents, homicide and criminal violence are men. More men also die of the great infections like pneumonia, tuberculosis, rheumatism, typhoid, probably for the reason that the habit of their lives bring them much more frequently into exposure to the germs of these diseases.

However, accidents and homicides are not sufficient explanation, for the reason that they comprise only about six or seven per cent. of the total mortality, while the difference between the death rate of males and females at all ages under fifty ranges from twelve to twenty-five per cent., while the excess of men over women who fall victims to tuberculosis, typhoid, etc., is less than one per cent.

That the accident and exposure theory is not a sufficient explanation is shown by the following. The superiority of female vitality over male is greatest and most unmistakable, not merely in the earliest years of life, but in the very earliest months. In fact, it is greatest in the very first year after birth, when the death rate among boy babies is nearly thirty per cent. higher than among girl babies.

Then comes the reasonable and valid explanation that the superior longevity of women is due to the much greater moderation and morality of the habits of life, their almost total avoidance of tobacco and alcoholic excess, but even this does not explain, inasmuch as the superior viability of women is as marked in France and Germany, where women use alcoholic liquors as an article of daily diet just as regularly as men do, as it is here in America, where only one-fifth of the women take alcohol habitually. It is as notable in prohibition states as in wide open ones. Even in the foreign born of our population a considerable percentage of whose women use alcohol habitually, the superiority of women over men is slightly greater than in our native born population.

So far we have listed these environmental conditions which seem to be in favor of women, and

yet we have failed to explain the mystery of their superior survival power, when in every other respect they stood equal with men, nor have we taken into account the actual handicap which the mere fact of sex imposes upon them. First and most unfavorable for them all is the extraordinary indoor, confined life which the vast majority of women are more or less compelled to lead.

Next comes the risk and fatalities of child birth and of the diseases peculiar to women, including their special liability to cancer at certain ages. In fine, we seem to be thrown back upon the conclusions that there is an inborn and inherent difference between the sexes in survival power, which, however, has not up to the present been satisfactorily explained.

Tobacco and Longevity. Inasmuch as heredity, hygiene, constitutional diseases, dietetic errors and autogenous toxines which may produce degeneration are incidentally alike in both sexes, we have to search for other poisons as the causative factor in producing the greater percentage of degeneration in the male over the female.

As a causative agent in producing early senility, tobacco is classified as one of the primary factors—the tobacco habit is almost exclusively met with in the male. Lorand places tobacco above all other agencies because of its power to elevate arterial tension. The active principal of tobacco is nicotine, the physiological effect of which is now well understood.

Brunton, the famous English physiologist, says, "I do not know of anything that causes such a tremendous contraction of the blood vessels and raises blood pressure to such an enormous extent as does nicotine."

Huchard, a noted French teacher, shows by experiments that excessive use of tobacco causes angina pectoris, by exciting spasmodic contraction of the small vessels of the coronaries of the heart. He further pointed out that high arterial tension is frequently observed in smokers and maintains that nicotine produces arterial sclerosis by reason of the frequent hypertension which it induces.

Dr. Scott, in his article, "Road to healthy old age" (1914), after enumerating several of the causes of arteriosclerosis, says, "Last but not least I blame the cigaret, that pernicious form of tobacco smoking of which a man never knows when he has enough."

In the final analysis tobacco stands today indicted as one of the most pernicious of cell poisons, causing slowly developing arteriosclerosis and cardiac inefficiency, with resultant presenility in middle life.

Alcohol. The relation of drink to longevity has of late been receiving considerable attention. Every analysis of the mortality of persons employed in the manufacture and sale of alcoholic beverages sustains the conclusion that the death rate in general is excessive.

An actuary of one of our largest insurance companies gives the experience of seven American companies and one Canadian company, regarding abstainers and non-abstainers, from which it appears that the mortality was from 10 to 30 per cent. lower among the former than among the latter. He also shows from the experience of two large insurance companies that the mortality among abstainers was distinctly lower than among those called "temperate" and very much lower than among "moderate users."

In dealing with the statistics of persons who used alcohol each day, but not to excess, he showed that among those who at the date of application for insurance took two glasses of whisky a day, but did not drink to excess, the mortality was 80 per cent. in excess of the normal. He also said that there was an extra mortality of 40 per cent. among the policy holders who drank to excess at least five years prior to date of application for insurance, but had been very temperate for five years before acceptance for insurance.

With regard to the policy holders who had taken a cure for alcoholism, he showed that the extra mortality among those who had been total abstainers for at least five years following the cure had been 35 per cent., while among those who had been temperate for that period the extra mortality was about 70 per cent.

The effects of intemperate use of alcohol upon middle age mortality is best illustrated by the reports of the United Kingdom Temperance and General Provident Institution of London, an insurance organization. This company placed the abstainers separate from another carefully selected list about equal in number, all supposedly moderate drinkers. The death rate among its abstainers for the past 40 years was 27 per cent. lower than among the general class.

In 1880 the per capita consumption of alco-

holic beverages was 10.08 gallons; in 1909 it was 21.85 gallons, an increase of 117 per cent.

Since 1880 the death rate in registration states from degenerated diseases in which alcohol is conceded to be an important positive factor has increased 104 per cent.

That alcohol is the sole, or even the chief cause of this increase cannot be authoritatively stated, but that it is a powerful factor is undeniable.

Focal Infection. Focal infections are today recognized as a primary factor in causing disease and producing early degeneration. Diseased tonsils, pus infections, hidden teeth troubles, decayed, neglected or badly treated teeth, inflamed gums may act as a gateway for the introduction of deadly germs into the system, which in turn may cause almost any systemic disorder, such as stomach and intestinal trouble, anemia and other blood disorders, chorea, rheumatism, Bright's disease, arthritis, myocarditis and other tissue degeneration, neuralgia, meningitis, melancholia, etc.

The channels by which focal infections produce disease and undermine the health may be divided into two classes. First, through the introduction of specific disease germs like that of rheumatism into the circulation by way of inflamed or diseased gums, tooth roots and cavities.

Second, through the absorption of pus from tonsils, pus cavities or gums into the system, causing the diseases just mentioned and perhaps aggravating other diseases, particularly tuberculosis.

Rheumatism appears to be the disease most commonly caused by bad teeth. True rheumatism is due to a specific germ, and this most often finds entrance to the system through the channels just mentioned.

The streptococcus rheumaticus has been isolated from between the teeth, from pus cavities around the teeth, from unhealthy tonsils, sore throat, the blood, the heart valves and other tissues of people who have suffered or died of this disease. The rheumatic infection starting in the tonsils, teeth, etc., enters the blood and lymph channels, the lungs, pleural membrane, heart, joints and nervous system.

Over 90 per cent. of Americans have defective, germ covered teeth, gums, tonsils and throats. The heart is affected in nearly three-quarters of cases of rheumatism. The delicate interior of the heart, especially the valves, become ulcerated and roughened; the pericardium may also suffer; also the heart muscle too often undergoes fatty degeneration with weakening of the cardiac walls.

By way of illustrating the great source of danger to the system from absorption of poison from focal infections, we have but to consider what takes place in that common disease which we meet every day, known as pyorrhea. In this condition the pus may be exuded from the diseased gums and then taken into the system by being swallowed, or if it is not present in sufficient amount to run from the gums it may be absorbed by the system in its effort to eliminate the diseased condition. In the latter case, it is as dangerous as when it is exuded into the mouth. The pus taken into the system adds to the dangerous burden on the kidneys already created by conditions tending to Bright's disease and diabetes and leads to the final development of these and other diseases in a great number of cases.

The amount of pus that may be taken into the system from a very ordinary case of pyorrhea is startling. If the tissues around each one of the thirty-two teeth exude one drop of pus every thirty minutes, that would be a very moderate quantity. In that case the patient would in twenty-four hours have swallowed three ounces of pus, and no system is strong enough to resist that amount of poison. If only one and one-half ounces of pus were swallowed every day, that would probably be sufficient to cause the outbreak of Bright's disease or tuberculosis in a person already tending towards that condition.

Auto-intoxication or alimentary toxemia is now accepted as an established pathological condition capable of producing sufficient poison to cause degenerative changes in various tissues and organs. Clinicians know how powerful these toxines, bacterial or pathologic, are and that a very small quantity may cause great disturbance in one or more organ tissues of the body. As a rule these toxic changes are not limited to a single organ.

Experience has shown that no organ exists for itself alone. There is such a thing as the correlation of organs and tissues, each and all acting together as an inhibitory or excitatory mechanism. The function of every organ depends on processes taking place in other organs and the products of its own activity influence the func-

tion of other organs. These products may be ferments which promote decompositions in the blood, or they may be hormones which regulate the activity of cells. Functional disturbances in any organ may therefore affect other portions of the body.

Recent investigations in renal pathology have shown the very important role played by auto-intoxication in kidney diseases. It requires but a moment's reflection to appreciate the extent to which abnormal waste products brought to the kidney for elimination, if for any reason elimination cannot take place, can irritate the cells of this organ. Conditions in other organs may be very similar.

As we go deeper into the pathology of waste retention we note the resulting phenomena from auto-intoxication, as for instance, the circulatory changes, especially the increase of blood pressure. Is it not reasonable to believe that many, if not all, of the degenerative diseases are closely related to faulty elimination or auto-intoxication.

The most powerful and dangerous of the intestinal poisons are indol and phenol, produced by the decomposition of elbuminoid substances in the large bowel. In a series of experiments conducted at the Pasteur Institute it was demonstrated that when phenol and indol are administered to guinea pigs, rabbits and monkeys for a considerable period, certain symptoms characteristic of senility result.

Our bodies are chemical laboratories, in which there are such compounds, acids and bases as constitute all other unstable organic chemical bodies, which are the result of the changes going on in the body as a whole, or in the individual cell, in taking in new matter, fixing and changing it, and throwing it off again. These processes are what are known today as metabolic processes, with its subdivision into catabolism and anabolism. These splitting and tearing down and building up processes are always going on. The bacteria themselves are indispensable to the digestion of some of the foods that we eat, especially the proteins, and the important thing to know is that too much decomposition of food of whatever kind in the alimentary canal without sufficient muscular exercise to bring about the combustion sufficient to burn it up, is going to result disastrously to the individual.

Metchnikoff advances some notions pertaining to the mechanism of senility. We believe that the phagocytes after defending a man's body against the invasion of deadly microbes for many years, finally become traitors and turn up their host in his old age and attack him viciously. These traitorous phagocytes have received various names, depending upon the tissues they choose to attack; for instance, those that attack bone are osteocasts. The lime salts thus absorbed from the bone are taken up by the circulation and deposited in various organs. While it was an unmixed benefit in the old man's femur, it becomes an unmitigated curse when transferred to his aorta.

Venereal diseases have a pronounced effect upon the mortality at the later ages from the serious circulatory, nervous and other organ and tissue degenerations which they induce.

The Mind and Longevity. The mind has much to do with health and longevity. Especially is this true when one is past middle life. At this period it is probable that more lives are shortened by worry than by either overwork or exposure.

This is an age of high pressure and fast living. In our great cities the stress, turmoil and pleasures of life are beating hard upon the constitutions of men.

The rapid growth of our country, the enormous increase of business due to the development of our natural resources, and the consequent tendency toward the concentration of the population about business centers, has greatly altered the national mode of life. From the simple outdoor life of our forefathers, we have become a race of dyspeptic money getters, whose highest ambition is too often the almighty dollar, and whose chief regard for health lies in the fact that its possession assists in the making of money.

The increase of American life strain is not alone due to the high pressure of modern existence. One element of our population is undoubtedly deteriorating from overstrain, due to excessive physical and mental exertion. Another large group is suffering from the excesses of indolence and physical inactivity. The automobile has brought many people into the open air, but has added to the nerve strain, and encourages physical inertia, overeating and drinking, all of which promote physical degeneration. The tendency of most modern invention is to reduce physical exercise and to encourage obesity.

From the foregoing it is very apparent the true cause of premature health is largely a question of erroneous habits of life.

The stress of our rapid and complex existence together with excesses or errors in eating and drinking, are the largest factors in breaking down the resistance to affections peculiar to middle life and old age. Probably 50 per cent. of all cases of disease could be prevented by reasonable hygienic precautions, and the cultivation of life habits which tend to neutralize the strain of modern existence and build up a resistance to degenerative diseases in general.

The secret of prevention of premature deaths lies in the recognition of the earliest signs of disease in an individual, and this can be only determined by frequent examination.

In this way we will be able at the earliest possible moment to correct the business, social and domestic conditions which makes such heavy demands upon brain, nerve and artery in order that a greater degree of bodily resistance may be built up to offset debasing influences. Just as in business life we draw largely upon modern inventions and the resources of science to increase efficiency, so must we avail ourselves of such knowledge as science now affords us in the care of our bodies and in the systematizing of our lives, to the end that economy of bodily resources shall be considered just as important as the conservation of natural resources.

If we can by frequent physical examinations add five, ten or more years to the average longevity of people past middle life, it would be a valuable national asset.

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DISCUSSION (ABSTRACT)

Dr. Graves was disappointed in the fact that neither Dr. Sadler nor Dr. Whalen dwelt any length of time upon the question that Dr. Robertson brought up about ways of overcoming some of these things. It would be interesting to know just how many physicians practice the things that Dr. Sadler and Dr. Whalen have talked about; how many practice what they are preaching. In his practice he can count on the fingers of one hand those that come regularly once or twice a year to be examined. He doubted very much if Dr Whalen has been examined for ten years. Possibly if we were to show the necessity of being as healthy and keeping as healthy as it is possible for us to keep, this might add a little bit to the influence that we have upon our individual patients. Every school teacher that is allowed to go into the school room should be carefully examined every time she begins a new session of school, and oftener if it seems advisable. We can't make the physicians, perhaps, be examined every year, but we can have the school teachers examined, and then it is absolutely essential that the school children should be examined every year when they enter the school.

He believes that if the physicians were to band together, if the ministers of the various churches, the priests and the protestant ministers were to unite in a campaign, if the school teachers throughout this country were to join with them, that something practical might be accomplished along the lines as outlined by the gentlemen who have read the papers.

Dr. Sadler said that in his experience for a number of years the only way this can be done is to have your clients agree to about the time of year they would submit to this; keep a card index; notify them, and ninety per cent, of them will report. Each year in the month of June he goes through his own examination and believes if he did not have a specified time and a regular program that he might run two, three or four years, because we are all alike.

Dr. John Dill Robertson (Chicago) suggested a solution of this problem whereby a great many of these preventable diseases may be prevented in universal physical training. The best illustration of the value of that training is that it is carried out now by the Young Men's Christian Association and the Young Women's Christian Association. The members of these organizations are examined. They are classified. The members of the organization who have diseases which prevent their taking systematic exercises are so notified and they are advised to receive treatment that they need. The other members of these organizations are systematically trained in physical development.

That method should be instituted in all our schools. The result would be that by the propaganda of education as to the value of physical development and physical training a great many of these degenerative diseases would be prevented. Doctor Whalen hit the nail on the head when he said it was a matter of habit. There are some diseases which they say should be prevented before the child is born, but these diseases certainly should be prevented by commencing a systematic training in life as early as possible and then carrying it on.

Of course that carries with it the systematic examination of the individual from time to time. The other suggestion as to team-work carries with it always a little suspicion whereby the community is rather distrustful of physicians. They think where they organize for team-work they are doing it for selfish reasons, whereas if the people are educated to believe that their children

should be inspected by the family physician they will do it voluntarily.

Dr. Howell thought the only thing we have to work on is the fact that we have a law whereby the students or pupils of public and parochial schools are supposed to get 15 minutes' physical exercise every day, and he thought that the teaching authorities should be compelled to see that the child gets that training. Then the matter of habit will come in and they will continue that throughout life.

Dr. Whalen: To get out from under the insinuation of hypocrisy by Dr. Graves, I am reminded of a statement that when doctors take what they will give and lawyers give what they will take and preachers practice what they preach, it is then time to put on your ascension robes. I will say that so far as my own experience is concerned, that Dr. Graves is very much mistaken, that for sixteen years I have taken a personal physical examination, not once a year, but not less often than once in six months and frequently once in three months.

PRACTICAL IDEAS REGARDING THE TREATMENT OF ACIDOSIS, COMMONLY CALLED UREMIA*

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I wish first to take up edema where there is no circulation. The most of us, if not all of us, have seen cases after injury—say of the extremities—where the principal artery has been injured so as to give us a break in the circulation with cold extremity, where we were unable to feel a pulse and yet we often thought we could get a feeble pulsation, and sometimes be in doubt until near the time demarcation had shown up.

The limb becomes swollen and there is entire absence of circulation of blood current—contrary to the teaching that variation of the blood pressure is the cause of the edema. I wish to show you this teaching has been erroneous—the teaching that increased blood pressure has forced the serum (blood) out of the capillaries into the cellular tissue, thereby the affected cells are made to swell.

In a limb of this description we have no blood pressure, and yet marked edema, showing complete absence of blood pressure seems just as potent in bringing about swelling as an imaginary increase.

This being true, we must cast about for some other, logical, unexplored cause for the edemas.

Now, what happens when the circulation is completely cut off?

In the warm blooded animals there is an accumulation of carbonic acid in the part. In the absence of sufficient oxygenation we have a bluish purple skin; in such tissue are produced other suboxidation acids, lactic acid being among them. The effect of these acids upon proteids—if gelatine or other protein material is immersed in cold water it swells up—as you have all noticed in any of the meats.

Now, if you please, acidulate this water and the flesh fibers soon become enormously swollen. Now this is just what happens in these cases. Normally, proteids have a certain capacity for water and swelling, but when the fluid is acidulated the fibers (protein) absorb more than the normal amount of water and produce greater edema. The limb has not had more fluid forced into it but the tissues themselves have been changed by disease whereby their capacity to hold water has been increased.

This hydrated condition of tissue to such water also exists under other conditions of which we will speak later.

The worst edema occurs in the dead, if water is furnished; for instance the drowned, or a dead body thrown into the water. Note the enormous general edema. After death the normal chemical oxidation of tissue is changed by the so-called postmortem acid which acts upon the (protein) colloids of the tissue, increasing their holding capacity.

In the living the source of edema is from the body fluids, and in the case of the dead it is taken into the system from without.

The general edemas as the nephritis of heart disease—a concrete example: Patient comes to you with swollen legs and dyspnea. For a few months previously was treated for stomach trouble, then for enlargement of liver. We find the swelling has been ascending from feet and legs for a couple of months. His looks and history point toward cardiac trouble. History of tonsillitis several years before, followed by rheumatism, one or more attacks. Now patient cannot lie down, dyspnea and other symptoms accompanying these cases; pulse 90-100 unequal; venous pulse in neck, lung apices clear, bases relatively dull—distant breath sounds, fremitus decreased

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with evidence of bilateral pleural effusion, cardiac dullness increased, apex beat in 6th intercostal space 2 inches to left of the nipple. Cardiac dullness at lower first rib, one inch to right of sternum. First heart sound has lost its booming character, and neither this nor the second is purely over its proper area. (Valvular.)

The disease involvement direct or through dilatation which involves all the valves with insufficiency of heart muscles, an occasional rise of temperature, irregular type, varying leucocytosis; we diagnose infectious endocarditis. Blood pressure 128—diastolic low. This evidence of cardiac disturbance with blood pressure as given, show diagnosis and prognosis different than where we have high blood pressure.

The large liver, lower abdomen, back and buttocks swollen—ascites—feet and legs very edematous. The central organ or pump is embarrassed and no more does its work properly.

The valvular defects cause incoordination of heart muscles, with irregular rhythm and intensity of heart beats. E. C. Rosenow has shown that these cases suffer from infection and may involve heart muscles, valves and pericardium or show a pericarditis or recent term, "pan-carditis."

Why this edema? First, incompetent valves. Second, decreased cardiac contractile force—the heart muscles do not push the blood stream through the circulatory system, consequently all tissues of the body suffer. The carbonic gas produced normally in all living cells will lag in its normal removal, which will give sub-oxidation of all tissues of the body, which produces the condition previously spoken of as hyperacid condition or acidosis with over swollen proteids.

The history of onset of edema is much different than in the nephritis, where we have swollen eyes, puffiness of the face, going with a general edema as in the parenchymatous nephritis.

The first class of edemas will often disappear by putting patient to bed with or without use of medicine, showing the absurdity that an increased blood pressure is the cause of edemas. Here we usually have low pressure, as the drugs given usually raise the blood pressure, and if so, ought to increase edema instead of diminishing it.

These drugs are a stimulant favoring better circulation and oxygenation with better removal of carbonic acid and other acids, with reduction in capacity of these acidulated tissues to hold water; hence we get a reduction of edematous tissues.

The time comes in the heart cases when rest and drugs fail to further stay the progress of disease. The edema increases, dyspnea, evidence of edema of tissues nearer the heart, the liver and kidneys, nearing the end with edema of brain cells, delirium and all its doleful sequences. The mechanism of the liver edema, the backing up of blood in the liver with capillary blood pressure forcing blood into liver cells, which was formerly believed, I wish to disprove.

It has been shown that if the portal vein is tied, edema of the liver does not occur. The portal blood has nothing to do with the maintenance of the liver structure in normal state. But if the hepatic vein is ligated we get edema of the liver.

The venal blood of the portal vein and arterial blood entering the liver leaves the liver through the hepatic vein.

The liver is oxygenated through the hepatic artery. Edema of liver in heart disease is due to the hepatic artery being obstructed in its flow with lessened oxygen with the previously stated consequences—acidosis and edema of liver parenchyma.

If this condition continues, the upper portion of the body, face and neck become swollen—at this stage we have headache and drowsiness supervened with nausea and vomiting, frequently accompanied with passive congestion and edema of stomach. Here we have acid intoxication with edema of the medulla. These are early symptoms of a serious pathological condition. Headache, drowsiness, increasing stupor are to be taken as evidence of acid intoxication and edema of the brain, and are the first danger signals of serious brain symptoms; if not immediately relieved will soon lead to stupor and coma. The medullary involvement is expressed in the stertorous breathing, so frequent before death.

If the patient does not die at this time we find the alveoli of the lungs are being filled with fluid, as are also the bronchi, with a developing pulmonary edema. Remember, this *edema* is not the *cause* of *death* in cardiac patients. Cohnheim pointed out years ago that they develop pulmonary edema because they are dying. These edemas are the same as mentioned in the liver cases because the pulmonary blood supply is not

through the pulmonary artery nor vein but from the bronchial branches from the aorta.

The changes occuring in the kidney in heart cases. The mechanism is similar to that occurring in other tissues of the body. The kidney, too, develops the edema, an inadequate blood supply, an accumulation of carbonic and other acids. These acids cause a swelling of the protein colloids of the kidney to hold an abnormal amount of water and thus the increase in size of the kidney so common in heart cases. At this time another condition is the beginning of granular casts of the kidney cells. These granules give the kidney tissue a cloudy or boiled appearance which with the swelling with other group of colloids give what is known as cloudy swelling.

Under this acid condition the kidney protein goes into solution. It is this softening which marks the origin of albumin in the urine.

This albumin is not due to breaks in the blood vessels nor escape of blood elements by diapedesis, but is due to acid solution of the kidney with the tendency of the structure to fall apart.

The colloid material which attaches kidney cells to their base, is more readily soluble in acid than the kidney cells themselves. The cells stick together and they separate into groups from their tubules. This forms the origin of kidney casts, whether epithelial or hyaline depending upon the concentration of acid present in the kidney and the length of time they have acted upon the kidney structure; so the character of casts depends upon the degree of destruction. The kidney under the influence of an acid power has its urinary secretion impaired. This decrease of urinary output goes with uncompensated heart lesion.

It is not strange from these conditions that casts and albumin are almost constant in uncompensated heart lesions. With this heart failure, intoxication of the kidney with acidity must increase. With failure of treatment, these kidney conditions become augmented, but if treatment is beneficial the urinary secretions rapidly increase with diminished acidity and convalescence. The urine acidity should be made by using 2 drops of a saturated alcoholic solution of methyl red added to 5 c. c. of urine.

Fischer says no cardiac or other type of cases ever recover who secrete urine that remains persistently acid to methyl red. A fall in acidity to below the turning point of methyl red makes the case more hopeful. Carefully following the acidity of the urine guides us to the amount of alkali to be administered. If very large doses of soda bicarbonate given in any of the methods fail to alkalinize the urine, the patient's prognosis is very bad and patient will not live long. (Fischer.)

In heart cases with broken compensation we get sub-oxidation with edema and acidity as previously alluded to. In obstetrical cases.

A nephritis of general intoxication: Patient's urine was negative; amount, 270 to 330 c. c. in 24 hours. Everything apparently normal. Labor normal. In a few hours delivered of normal child. A little ether was used during delivery of head. Temperature normal. For several hours after delivery all went well, then, awaking from a sleep, she complained of headache, urine less in amount, catheterized specimen was acid to methyl red, a slight general edema. In 24 hours after labor she began to vomit, drowsiness set in. Two drams of soda bicarbonate with like amount of magnesium sulphate in solution were given. Headache and vomiting persisted; few hours later she had a convulsion. Now what had happened? Urine negative at onset of labor. Were these symptoms due to diminished output and designated uremia secondary to loss of kidney function? If so, why not duplicate this condition by double nephrectomy? In nephrectomized animals none show signs of symptoms generally classed as uremia, though they may live 1 to 3 weeks. They showed no mental condition, neither do these animals deprived of these kidneys show edema. (Fischer.) Animals that were given uranium nitrate within a few hours began to develop edema. These animals showed a decreased urinary secretion with casts and albumin (a nephritis); likely to be drowsy and on irritation become convulsed, but after double nephrectomy may live many days. The poisoned animals lived not over 3 to 6 days. The poisoned animal presents the same picture as our patient did. When suffering from intoxication incident to pregnancy as it strikes the kidneys, the intoxication produces edema with albumin and casts. As it affects subcutaneous tissue edema results. If it affects the brain and medulla these organs swell and cause headache, visual changes, nausea, vomiting, stupor, coma, convulsions and possibly death. This is not uremia, but toxic edema of the central nervous system and is *not* due to loss of kidney function.

It is very important to get the relation of these

two conditions well established. We are all too prone to make diagnosis of uremia with positively negative urinary findings. The head symptoms must not be considered secondary to kidney, but may be of the same pathological type—edema and the one not *consequent* to the *other,* but both due to a toxic state acting upon different organs.

Poisons injected do not necessarily involve the same organs at the same time or rate.

In pregnancy we may have the kidney involved or at another time the head, or rarely the liver chiefly; if so, we call it acute yellow atrophy. One-third or one-half of all convulsions incident to pregnancy occur after delivery. These patients before delivery show a high degree of acid intoxication, yet insufficient to produce edema of kidney, brain or other organ. To an existent acid condition we may add acid production incident to anesthesia, to the muscular efforts in labor.

Added to the acid intoxication subsequent to the narcosis, chloroform, ether or morphine, the two are sufficient to bring about in this critical period of unbalance, by the fatigue of labor, the edema of the brain with convulsions.

Soda and magnesium were given to dehydrate the brain and kidneys. This gave improvement, but in a few hours drowsiness and another convulsion followed, with coma and hemiplegia. We now, in order to more thoroughly dehydrate patient and alkalinize the acidity, gave her 1,000 c. c. of a mixture of sodium bicarbonate 8.4 grams, sodium chlorid 28 grams, water qs. 2 liters. This was given intravenously and the patient had no further convulsions, but continued in light semi-coma, so we decided to give her intravenous of 2 per cent solution magnesium sulphate 300 c. c. Patient improved; then later gave another intravenous of 250 c. c. In a few hours she became mentally clear and went on to complete recovery.

I wish to state that before the magnesium sulphate infusion, her mental condition was such that psychiatrists would have diagnosed a mild mania. She was excited and did not know where she was nor did she recognize members of the family, this condition lasting 4 to 5 days. We continued the alkaline by mouth with magnesium in small doses, believing the condition to be due to edema of central nervous system.

Along this reasoning, the purely puerperal manias are essentially toxic edemas of the brain. If this is true, and we believe it is, perhaps many of the mania cases sent to our state institutions ought to be cured by following along this line of treatment for cerebral edema. Many autopsy findings show nothing other.

An old infection of the kidney or arterial disease may show up for the first time in pregnancy. These possibilities as cause of disease should be borne in mind when pregnancy intoxication becomes a general one, affecting all the body cells, or which may make a certain kidney or brain the chief sufferer, or, so to speak, dominate the general system. Intoxications, as those caused by chloroform, ether, nitrous oxide, or alcoholism, or by a variety of metals, produce a systemic picture of poisoning, clinically of pregnancy intoxication.

In all these there is a tendency toward a general edema, stupor, coma and convulsions, or where most force is exerted upon the kidney, we get albumin and casts with decreased urinary output.

But remember, none of these conditions are secondary to some other—to kidney or brain symptoms—but all are equally due to the primary intoxication, with a tendency to attack all or any one of the body cells at the same time.

To summarize:

1. What is the prognosis of the kidney in these nephritides? If they do not die in their eclampsia and the urine is cleared of pathological findings, the prognosis is good. These patients do not go on to chronic nephritis. They are not especially predisposed in future pregnancies to recurrence of albuminuria or uremia or other types as has been taught. The termination means the termination of intoxication, and if we succeed in preventing consequences of this they have permanently recovered.

2. Always be suspicious of nephritis that continues after delivery, as it is then not of pregnancy origin. The kidney is the seat of infection. We have arteriosclerotic changes. Many of these cases are not due to the pregnancies but to other infections, but may come to light through routine examination, as might easily be discovered in anyone.

3. If we recognize that pregnancy intoxication is a general one, but may make certain organs as the kidney or brain chief sufferer and they dominate the general picture, and the relation

between this type and that of other patients with general intoxication as that of anesthesia, alcoholics and mineral poisoning; all these stimulate clinically the intoxication of pregnancy with a tendency to general edema, stupor, coma and convulsions when the kidney becomes involved, the urine decreased, often dark in color, albumin and casts. None of these symptoms are secondary to some other as to head or kidney, but all are due to the primary intoxication which tends to attack all cells of the body.

4. In nephritis developing in consequence of some soluble poisoning passing through the kidney, the poison tends to involve the whole kidney more or less equally. This, also, is true in a circulatory disturbance through lack of oxygenation. The whole kidney becomes swollen and grayish. Secretion of urine becomes scanty and we get anuria and what urine is secreted is heavily loaded with albumin and casts.

5. All these symptoms constitute a group heretofore held to be characteristic of parenchymatous nephritis and associated with general edema, first shown by puffines of the eyes. From the above reasoning this generalized edema is not characteristic of secondary parenchymatous nephritis, but shows the patient is the subject of a general intoxication, since the toxic agent may attack and produce edema anywhere in the body.

CONGENITAL HYPERTROPHIC PYLORIC STENOSIS*

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Since the publication of the first case of congenital hypertrophic pyloric stenosis by Williamson, of London, in 1841, it has been very interesting and instructive to review the literature and to notice the large number of cases that have accumulated from time to time. The subject, therefore, is a very live one today in the domains of surgery and pediatrics.

Pathology. The knowledge we possess of hypertrophic pyloric stenosis is derived from postmortem investigations. The size of the pyloric tumor found varies in individual cases. In some it is about the size of the thumb, oval in shape, firm, hard and smooth. Thomsen, of Edinburgh, holds that the essential lesion is not a muscular but a nervous one; that there is functional disturbance of the stomach and pylorus, leading to ill-coordination, and therefore antagonistic action of their muscular development. In congenital hypertrophic pyloric stenosis the growth involves the muscular fibers, the pylorus being transformed into a solid cylindrical mass, about an inch in length, pale in color, and in some cases as hard as cartilage. The pylorus may reveal enormous hypertrophy of the circular muscles. The intermuscular bundles may be enlarged. In some instances the mucous membrane may be thrown into longitudinal folds and be redundant. Many cases of so-called pylorospasm treated medically with good results, but manifesting a recurrence of symptoms from time to time, undoubtedly belong to the class of hypertrophy with partial obstruction. Marie, Russell and Landerer have reported such cases, and some of them subsequently underwent operation.

The clinical course and the uniform pathologic findings have convinced me that a division of cases of pyloric stenosis in infants into spasmodic and hypertrophic types is not admissible. Hypertrophic stenosis of the pylorus in infancy is a pathologic entity, and should not be confused with other pathologic conditions which may be accompanied by vomiting and occasionally gastric peristalsis.

Symptoms. The symptoms begin within two or three weeks of birth. After taking food there is not much evidence of pain, although the child may appear to be uncomfortable, and relief is obtained by vomiting. According to my observation, the child is normal at birth and is well nourished. It continues to progress normally until about two weeks when it begins to vomit. From one to seven weeks after birth some of these infants begin to vomit; the majority of them begin to vomit in from one to five weeks. The vomiting is projectile, and it usually occurs soon after feeding. The child may retain several feedings, and then eject all of them. Observation of the abdomen will reveal visible peristaltic contractions after feeding and until the child vomits. While the baby may eject practically all of the feedings, still some of the food will usually pass through. If the abdomen is inspected shortly after feeding, marked rhythmic peristaltic waves may be discerned traversing the

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stomach from left to right. It is stated by some authors that the vomited material in congenital pyloric stenosis never contains any bile; that the pylorus is closed and the bile cannot enter the stomach. In Bunt's table gastric peristalsis was present in 84 per cent and tumor in 69 per cent of cases. In typical cases two or more meals may be kept down, and then the whole is forcibly expelled. Pfaundler found that the first vomiting or onset of the disease was between the fourth and fourteenth days in 50 per cent of the cases, from the second to the third week in 25 per cent, and from the third to the sixth week in 25 per cent. The vomiting is not controlled by the usual medicinal remedies. Lavage may reduce the vomiting to once or twice a day. The weight of the infant is the index to its nutrition. Several authors emphasize the presence of hyperacidity. Constipation is marked and increases in severity. The stools are often devoid of fecal material and resemble brownish or dark green paint or meconium. Occasionally they are tarry. There is progressive emaciation. The loss in weight is inversely proportionate to the amount of food passing the pylorus. The body surface is cold; temperature is subnormal; pulse small, frequent and weak; the general appearance of the infant is one of whining lethargy, with half open eyes and sunken fontanelles. Visible peristalsis is an important physical sign, which is most marked in cases of prolonged duration. The characteristic features of a typical case are the age of the infant, vomiting, constipation, wasting, visible peristalsis, dilatation of the stomach and a palpable pylorus. The condition is much more common in male than in female infants. Holt says that four-fifths of the cases occur in males, and Keefe agrees with Cautley that the disease is usually found in male infants who have been breast-fed and are healthy in appearance. While a pyloric tumor may be palpated in most of the cases, it may be so covered by the liver that it is impossible to detect it. Keefe recalls one case where three physicians thought they could feel a tumor, yet on opening the abdomen they were in error, and it was tucked away under the liver and could not have been felt. Cumston, of Switzerland, states that pyloric tumor was detected in only 25 per cent. of a long list of cases studied. Cases have been observed in which the pylorus was said to be distinctly palpable, and yet no hypertrophy found after death. Morse, of Boston, thinks it is never safe to conclude that there is no tumor unless the abdomen has been examined with the stomach both full and empty, and with the abdominal walls relaxed, if necessary, under an anesthetic.

Diagnosis. I am satisfied that some other means than palpation of the pylorus is essential to aid in the differential diagnosis between hypertrophic pyloric stenosis and pylorospasm. Wachenheim considers that the diagnosis between pyloric hypertrophy and presumably normal conditions is beset with difficulties, and that as a consequence the differentiation between spasm and true organic obstruction is likely to remain in many cases a matter of great uncertainty unless new diagnostic methods are placed at the command of the physician. Weeks thinks that the cases of babies said to have recovered from this condition under medical treatment were improperly diagnosed as tumor could not have been present. Thomsen, of Edinburgh, says that the diagnosis often rests on a careful study of the history, symptoms and course of the illness, and age of the patient. The presence of visible peristalsis and a palpable pylorus are the most reliable physical signs, but it is not necessary to wait until the pylorus can be felt with absolute certainty before coming to a definite conclusion. Very little importance is attached to the x-ray as a diagnostic aid in this condition.

Medical Treatment. The pediatrician says the medical treatment consists of washing the stomach twice a day with a solution of bicarbonate of soda, grains five, to one ounce of sterile water; rectal injections of one-half pint of normal salt solution, three times a day; small quantities of water by mouth (hot), citrated milk, modified milk, peptonized milk, meat juice or albumin water, or any food which remains fluid in the stomach is to be given in minute quantities at frequent intervals. If the diagnosis is made early, and if the obstruction is only partial, medical treatment is often effective, but it entails a long supervision. The writer believes that in many of the milder forms, patients recover with only medical treatment, but all those that do not improve under such treatment in the course of two or three weeks should be dealt with surgically. With the more severe type only a short delay is permissible. A maximum loss of one-third of the

body weight should be the extreme limit before surgical intervention. It is impossible to reconcile the conflicting ideas that prevail as to the death rate of hypertrophic pyloric stenosis under non-surgical treatment. No large series of cases has been treated medically in America. Hutchinson, of London, in 1910, reported a remarkable series of cases treated non-surgically, with results entirely different from all other observers. In a series of 17 cases in private practice there was not a death; in 64 cases treated in hospital practice the death rate was 78 per cent. From a careful perusal of the literature it would seem that congenital pyloric stenosis is a surgical condition from the time the diagnosis is made.

Surgical Treatment. Williamson published an account of this condition in 52 children, with autopsy findings, in the *London and Edinburgh Journal of Medicine*, 1841. A careful examination of the literature by Shaw, of Albany, in 1904, revealed 117 cases, while Ibrahim collected over 400 cases in 1908. It is evident that the knowledge of hypertrophic pyloric stenosis is disseminating and doctors everywhere are recognizing this condition. W. A. Downes reports 66 cases operated on in five and one-half years. Gastroenterostomy was performed on 31 of the 66 cases, the remaining 35 being operated on according to the Rammstedt method. Of the 31 cases in which gastroenterostomy was done, there were 11 deaths, a mortality of 35 per cent. Of the 20 discharged as cured, 2 afterwards died of gastroenteritis, and one died of diphtheria. The remaining 17 are well and have developed normally. In the last 35 cases the Rammstedt operation was done with 8 deaths, a mortality of 23 per cent. Of the 27 cases discharged as cured, 2 have died since leaving the hospital. The remaining 25 are well extending over a period from a few weeks to one and a half years. The cases operated on according to the Rammstedt operation vomited less and were easier to feed after operation. C. Rammstedt (Munster) in 1913 proposed a new technic for pyloroplasty in this condition, which consisted of making the first stage of extramucosal pyloroplasty, i. e., dividing the peritoneum and the pyloric sphincter, but not the mucosa. As soon as the sphincter is completely divided, the two lips gape and separate.

In my belief this is the operation of choice. If to this technic be added the dissection of the severed ends of the pyloric muscle from the mucous membrane, and under these free ends of sphincter pylorus the great omentum be gently tucked, permitting it to span a gap in close contact with the mucosa and held in place by four interrupted catgut sutures, the fear of possible gangrene or herniation is well guarded. Possible recurrence by union of its cut edges is not likely as the defect will be strengthened by the adhesions of the omentum.

The Rammstedt operation, with the addition of the omentoplasty, is by far the best, and it is the simplest, quickest and safest. The operation can be performed in from 12 to 18 minutes. If the operation is not too long delayed, there is little danger to the patient. Anesthesia is necessary for about 15 minutes, less manipulation is required, and there is greater ability on the part of the babe to take food and retain it. I have followed this technic in six cases with no mortality.

Cases followed two and three years after the Rammstedt operation showed no interference with health and progress.

Postoperative Treatment. We believe that the postoperative results are dependent to no little extent on the preoperative condition of the patient. Feeding is started as soon as the babe regains consciousness. Daily cleansing enemata are given for keeping the lower bowel free, as the babies seem better able to take and retain their feeding. After the Rammstedt operation there is little vomiting. If a baby cries, paregoric will keep it quiet during the healing of the wound. So far, the literature contains no account of the recurrence of the symptoms following the Rammstedt operation. Great stress is laid by some authors on the need of careful postoperative treatment, especially in the feeding of the child. Skilled after-treatment is quite as essential to good results as good surgical technic.

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FALLACIES OF THE FACE MASK IN THE CONTROL OF THE ACUTE INFECTIOUS DISEASES

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CHICAGO

For a number of years those who have made a special study of the so-called contagious diseases have been endeavoring to teach us that these infections are transmitted, with a few possible exceptions, by either direct or indirect contact. As early as 1895 Grancher[1] was impressed with this idea and undertook to demonstrate it in the Pasteur Hospital.

The modern theory is, then, that, generally speaking, the acute infectious diseases are not air-borne and in most instances there is ample proof to support this view. However, measles, chickenpox and smallpox may be transmitted through the air to a limited extent. This seems certain in spite of any contentions on the part of extremists to the contrary. Nevertheless, by aerial transmission we do not mean to insinuate that any one of the last named diseases may take a notion to blow across the country or city or even street, infecting susceptibles. But a non-immune who goes into a room where one of these diseases exists in an active stage may surely fall a victim to it without being in either direct or indirect contact with the patient. Parenthetically it may be stated that if a patient coughed directly into one's face, causing infection in that way, such an instance would not be regarded as a case of aerial transmission. It would be one of direct contact.

It has been definitely shown in London and Liverpool Hospitals, as well as elsewhere, that measles and chickenpox cannot be absolutely controlled by the cubicle system—the arrangement whereby we have only partial partitions between the beds with the same air circulating over the heads of all the patients. However, we do know that scarlet fever and diphtheria are two diseases in particular which can be controlled in this manner when aseptic nursing is carried out and the correct measures adhered to. On the other hand, while the contagion of measles and chickenpox is extremely diffusive, such a thing as a measles or chickenpox carrier is hardly thought of in the ordinary sense of the term. If one or the other of these two latter diseases is carried by a third person, it is purely a mechanical proposition and the distance and duration of time between the source of infection and the susceptible individual must be very brief. In such instances the infection is carried because the third person is not "clean." In all probability the contagion is then carried on the hands directly from patient to susceptible. And if it is not on the hands, then it is on the gown or clothing which has come into direct contact with the patient. At all events, it is hard to conceive that the infection is borne on the breath of the carrier.

The bearing which the preceding remarks have on the main topic of this paper will now be apparent.

It seems to me that since the publication of Weaver's[2] paper, in which some excellent suggestions were made regarding the use of the face mask, that that portion of the medical profession which has recently come into special association with the communicable diseases through army work or otherwise, has to some degree lost full control of its reason. In fact, it appears that fully three-fourths of the face mask enthusiasts are those whose experience in contagious diseases has been very limited. It is a very natural thought, of course, to those new in this line, to seize upon the face mask as a grand panacea for eliminating all cross-infection. However, to require all physicians, all nurses, and, in fact, practically all employes of a contagious disease hospital to wear face masks during all their hours of duty would be to my mind the height of absurdity. There are other precautions to be taken which are of far greater importance and which impose no discomfort. The foregoing statement should in no wise imply that the face mask has not its uses, and its appropriate uses have been well defined by Weaver.

Now if we analyze this subject we soon discover how inconsistent is the universal use of

the face mask in a contagious disease hospital. We say that these infectious diseases, in the main, are transmitted by direct or indirect contact. Then why should a hospital employe who does not go into a ward or room where there are patients wear a mask? Why should a head nurse or physician who walks through a corridor wear a mask? We have adopted the general assumption that these contagious diseases are not airborne. Furthermore, working on this same basis, why should an attending physician or an interne wear a mask even if he goes into the ward or room where patients are, so long as he is not in close proximity to them?

The ideal hospital routine in the case of contagious diseases is the aseptic nursing plan. This, of course, to be properly carried out, requires a complete outfit of separate utensils for each patient, many nurses and much training. The same general precautions which are resorted to in an operating room to avoid infection must receive minute attention here in order that no infection is carried *from* the patient. The only difference in technique is in the reversal of direction in which the infection may be carried—in the operating room to the patient, and in the contagious disease hospital away from the patient.

Nevertheless, what is probably the chief factor of all in the prevention of crossed infections can be easily adopted. I refer to the care of the hands of all attendants. Clean hands will not convey an infectious disease from one patient to another. Moreover, they will not be the means of conveying a disease to the attendant. Stop and think how many times a day you rub your hand across your mouth or nostrils, and see how easily infection may occur in this manner.

After handling a patient with a communicable disease the hands should always be scrubbed with plenty of soap and running water. Disinfecting solutions are seldom required. At the Cook County Contagious Disease Hospital it has always been my custom to wear rubber gloves when examining patients. The rubber surgical gloves can be more readily and more thoroughly cleansed in some solution when running water is not easily available.

It has been stated that at the Durand Hospital following the adoption of the face mask, fourteen cases of epidemic meningitis were cared for in 1917 without any nurse or attendant becoming infected. I would much prefer to attribute such a result to good nursing technique rather than to the wearing of face masks.

In considering the question of face masks there are some very interesting results to be noted at the Cook County Contagious Disease Hospital. This institution, a department of the Cook County Hospital, has a maximum capacity of about 300 beds. Its buildings are not of modern hospital construction. There are a few small rooms, small and large wards. The wards accommodate from five to twenty-five patients. There are no cubicles. The hospital receives practically all classes of contagious diseases with the exception of smallpox. Scarlet fever, diphtheria, measles, chickenpox, mumps, whooping cough (rarely), erysipelas, epidemic meningitis, and poliomyelitis are all included. This hospital treats anually from 1,600 to upwards of 2,000 patients. The excellent results obtained are due chiefly to the high standard of nursing service provided.

In 1917 we included among our patients at the County Hospital sixty-six cases of epidemic meningitis and 428 cases of poliomyelitis. Neither nurse, physician nor employe of any nature contracted either of these two diseases, yet none of the hospital attendants was masked except in one or two isolated instances where the wearing of a face mask was optional. It may further be said that of approximately 600 cases of poliomyelitis cared for in the wards during the past two years there has not been one single instance of a crossed infection. To be absolutely accurate, it must be said that there was one patient who occupied a separate room with a special nurse where the question of a crossed infection was a subject of dispute. This instance furnished the nearest approach to the occurrence of a crossed infection, and this particular patient was not in a ward.

For more than four years past there has not been a maid, orderly or any similar employe in the contagious disease department of the Cook County Hospital who has contracted a contagious disease. And among the nurses and internes the number of infections has been extremely small. The service of the internes in the contagious disease department is one month, while

most of the nurses are graduates and their positions permanent.

We consider such results as the foregoing good. In fact, it is evident that there could be little improvement in the particular respects referred to. But we do not assign our degree of success in controlling cross-infections to the fact that no face masks were worn. We believe that what has been accomplished has been accomplished through good nursing, including the care of the hands.

There is no doubt that under certain conditions the wearing of a face mask is a most excellent precaution, and it is not my intention to ridicule its use. When examining throats or taking cultures or doing any variety of work about the patient's face, an interne or nurse will make no mistake in wearing a face mask.

It has been reported[3] that at one of the army cantonments face masks are worn by the patients when they go outside their cubicles. This seems to be a most reasonable idea, but the question might arise as to what care the face mask receives by the patient when it is not in use. Also, how often are clean masks provided? And still more important, what care is taken of the hands that handle the mask? The plan might prove of value or be valueless or even still less. And with such a procedure in vogue, the wearing of a face mask might produce a very dangerous degree of mental security so that ordinary care regarding the spreading or acquiring infection might be neglected.

Where aseptic nursing cannot be carried out in all its details in a contagious disease hospital, the following precautions can at least be taken:

1. Always scrub hands with soap and running water after handling patient. If running water is not at hand, it is advisable to wear surgical rubber gloves, which are more easily cleansed.

2. Have a separate gown to wear for handling each patient, if possible, but at all events always change gown worn when in contact with patient having one disease before coming in contact with a patient suffering from a different disease.

3. All hospital employes of every character who have a positive Schick should be actively immunized by the toxin-anti-toxin (T. A.) method.

4. Nurses and physicians coming into close contact with patients should have nose and throat cultures made at least twice a month to eliminate the possibility of being carriers.

5. No nurse with enlarged or infected tonsils or with carious teeth should be permitted to serve in a contagious disease hospital until the defects have been remedied.

6. Before attempting any examination or work of any character about the nose or mouth of a patient, it is advisable to put on a face mask.

7. In order to impress upon new nurses the essentials of aseptic nursing, it might be well to require them to serve a sort of probationary period of perhaps a month, during which time the wearing of face masks would be obligatory throughout their hours of duty. This same idea could be employed as a disciplinary measure requiring nurses to be masked for some definite period when crossed infections occurred among patients under their care.

The management of any contagious disease hospital which adopts the compulsory wearing of face masks for all its employes is simply making a confession of inefficiency on the part of its nursing or medical staff. Good nursing, cleanliness and care will accomplish far more than poor nursing, carelessness and a face mask in the control of the communicable diseases.

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SURGICAL TREATMENT OF UNILATERAL RENAL TUBERCULOSIS: IMPORTANCE OF EARLY DIAGNOSIS*

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Although the question of the surgical treatment of renal tuberculosis has been pretty definitely decided, at least by those who are most competent to decide such questions, there are still many physicians who are unaware of the fact that the best form of treatment for renal

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tuberculosis is surgery, and, therefore, they cling to the medical treatment of these cases. While under certain circumstances one may resort to the use of tuberculin, fresh air, hygiene, etc., in order to fortify the patient before operation, this must not be construed as meaning exclusively medical treatment. This form of treatment, in other words, should not be carried to a point beyond where surgical treatment, which very often is the only remaining hope of the patient, must be refused. For a time it was advised to treat all patients with tuberculin before operation, but this suggestion finds few adherents today.

In only one other feature of urological surgery does one meet with the distressing and hopeless outlook that one so often sees in urinary tuberculosis, and that is, in carcinoma of the bladder and prostate. The suffering and agony of a patient with an extensive tuberculosis of the bladder secondary to a tuberculosis of the kidney is most distressing and painful to see, especially if one contrasts such a patient with the patient who comes in early with just beginning vesical symptoms. Such a patient can be restored to complete health and perfect bladder function as a result of early surgical intervention. It is altogether too frequent an occurrence to have patients come in with an extensive tuberculosis of the kidney and bladder, giving the usual history of medical procrastination and errors of diagnosis due to lack of thorough clinical investigation. If a possibility of tuberculosis be thought of, a presumptive diagnosis can be made much more frequently than is generally supposed. Instead of even thinking of the possibility of tuberculosis, many of these patients are unhesitatingly placed in the great class of either cystitis or nephritis cases, because of the presence of pus or albumin or both in the urine. If the general practitioner, and it is he who most frequently sees these cases first, will bear in mind the possibility of tuberculosis in each case of cystitis that does not yield within reasonable time to the usual treatment for cystitis, many more early diagnoses would be made and hence an increasing percentage of better end-results would be obtained.

It is surprising to see the various diagnoses that are made other than the correct one. In women the diagnoses of cystitis and nephritis are not made as often as they are in men: The diagnosis of uterine or ovarian trouble is made and the patient operated upon. Many of our cases have had operations upon the pelvic organs or appendix without obtaining any relief or cure of their symtoms. Many times in men because of a history of bladder distress a diagnosis of chronic gonorrhea is made and these patients subjected to all forms of needless instrumentation, such as bladder irrigation, passage of sounds, and the treatment of the deep urethra with the endoscope. If one bears in mind that in nearly all these cases the diagnosis of genito-urinary tuberculosis is possible without resorting to the use of special instruments or equipment, and that each case of frequent urinations associated with pus in varying amounts in the urine should be considered as a case of renal tuberculosis until it is proven otherwise, then the number of cases that miss being recognized will be very small instead of as it now is, very large.

Frequency of urination associated with other evidences of tuberculosis should immediately arouse our suspicions that we are dealing with a case of urinary or genital tuberculosis. Evidences of glandular tuberculosis, such as scars in the neck, the presence of evidence leading to, or the history of bone or joint tuberculosis, a nodule in the prostate or in the seminal vesicles, should at once point out the way from a study of the gross clinical evidence easily obtainable. The next step to establish this fact would be the demonstration of tubercle bacilli in the urine. Their presence would clinch the diagnosis with but rare exceptions, to be discussed below. The fact that tubercle bacilli have been found then calls for study in order to discover the location of the tuberculous process. This, of course, means the employment of the finer instruments of examination, such as cystoscopy, ureteral catheterization, cultures of the urine, stains for organisms, animal inoculation, Roentgen-ray, etc.

The demonstration of tubercle bacilli in the urine is generally believed to be a difficult task and one that is only rarely rewarded by finding the organisms present. This is absolutely an erroneous conception in the minds of many men, doubtless due to the faulty teaching of several years ago, when it was taught that tubercle bacilli could only very rarely be demonstrated in the urine. While no rule is infallible, as a broad statement I wish to say that this is absolutely wrong. Tubercle bacilli can be demonstrated

much more easily than is believed. The great difficulty is due to the fact that the search for tubercle bacilli takes time—and lots of it.

If, however, we cannot demonstrate the tubercle bacilli and the clinical symptoms and signs lead one to a diagnosis of tuberculosis, one may then resort to the use of the guinea pig. This is generally considered a "dead-sure" way and an easy way to pick up the organisms. That this method is not free from possible sources of error has been our experience. In the past year we have twice failed to find evidence of tuberculosis in the guinea pig, although the patients were suffering from renal tuberculosis, as proven by the demonstration of tubercle bacilli in the urine and furthermore, the kidney removed by nephrectomy showed the presence of tuberculosis. So that while the guinea pig is a very valuable method of demonstrating tubercle bacilli in the urine, one should not forget that this method, like any clinical method, has a certain percentage of error. In other words, physicians often have a sense of false security. They will say a patient has not tuberculosis because the guinea pig failed to show tubercle bacilli. In several instances this belief has led to wrong diagnoses and the patients were treated for other conditions and as a result the bladder process became more and more extensive. In but three cases of renal tuberculosis did we fail to find the bacilli in the urine. In one the clinical diagnosis of renal tuberculosis was made from the clinical symptoms and cystoscopic findings, although the autopsies of the guinea pigs were negative. In another instance we failed to demonstrate tubercle bacilli in the stained slides, although a cystoscopic diagnosis of renal tuberculosis was made, and proved at operation.

The use of the cystoscope and ureteral catheter often gives us information which is suggestive of the side involved. The typical tubercles in the bladder and the ulcerating ureteral orifice are familiar to all of you and need no further discussion. The demonstration of the origin of pus and tubercle bacilli from one side and the presence of clear urine from the opposite side will establish the diagnosis.

Difficulties in Diagnosis. In the cases of closed tuberculosis pyonephrosis, pus and tubercle bacilli do not reach the bladder, so that the urine in this group of cases is perfectly clear and sparkling, and the diagnosis is accordingly difficult. These cases because of circumstances have a good bladder capacity, so that repeated cystoscopic examinations and study can be carried out very easily.

There is another group of cases, however, in which both pus and tubercle bacilli may be demonstrated in the urine, and because of a contracted bladder cystoscopic examination cannot be carried out. This is the group of cases that generally come in late in the course of the disease and at a time when the bladder is enormously contracted, so that distention cannot be obtained. The mucous membrane is red and often shows the presence of many tuberculous ulcerations. Often one is not able to obtain the desired amount of distention even under deep anesthesia, so that ureteral catheterization is impossible, and hence no diagnosis of the well and sick side can be made. Often the diseased ureteral opening can be seen and catheterized, still leaving one in doubt about the presence and function of the kidney to remain.

If I suspect tuberculosis but cannot demonstrate the bacilli, I have resorted to the procedure suggested by Buerger, namely, to excise with an operating cystoscope some of the edematous mucous membrane and subject this tissue to histological diagnosis. In one of our cases this procedure was carried out at a time up to which we were unable to demonstrate tuberculosis, which was done later.

Roentgen-Ray Diagnosis. The Roentgen-ray in the diagnoiss of renal tuberculosis has not become a routine established procedure. This is apparent from the scarcity of the literature upon this subject as well as case reports. The late Dr. Krotoszyner, of San Francisco, reviewed the literature on this subject a few years ago and found it very scant. He came to the conclusion that roentgenography may be of definite value in the diagnosis of renal tuberculosis when other clinical methods fail. He was also of the opinion that the differential diagnosis of nephrolithiasis and renal tuberculosis by roentgenography is feasible in the presence of tubercles and renal caseation. He quotes Casper, Forsecle, Hofmann, Holland, Cole, Proust and Infroid as having written articles bearing on this subject. Doubtless this lack of literature is in the main due to the fact that the cases of renal tuberculosis that come to the urologist with symptoms can be diag-

nosed by means of the cystoscope and ureteral catheter.

There is a small group of cases, however, in which cystoscopy for various reasons as above discussed cannot be carried out. It is in this at present small group of cases that one may or should resort to the roentgen ray as an aid in establishing the diagnosis. This method has served me in about three cases.

Exploratory Operation. It is but rarely that one must resort to an exploratory operation. Still one may occasionally meet a case in which this must be used as a last resort.

Tubercle Bacilli in the Urine. While thus far I have considered the methods which help to establish the diagnosis, there is another important aspect of this subject and one that has received but scant attention and one that is deserving of serious clinical study. It is not my object to discuss in detail the many phases and significance of tubercle bacilli in the urine with reference to the possibility of the normal kidney being able to excrete tubercle bacilli and yet this is a question that has not received enough attention.

Clear Urine. It is generally believed, and rightly so, that a patient suffering from renal tuberculosis has as one of the signs upon which the diagnosis is based cloudy urine, due to the presence of pus in the urine. While this is in the main true, it is not an infallible sign. By this I mean that the opposite condition may be true, namely, that a patient may be suffering from a well advanced tuberculosis of the kidney and yet the urine may be free from pus, that is, the patient presents himself with clear urine. This can occur in the cases in which the ureter of this side is completely occluded, and hence, the pus and bacilli will not be passed in the urine. I do not refer in this group of cases, to the so-called closed tuberculous pyonephrosis, but to the cases in which the ureter of this side is patent. Attention is called to this point for the purpose of bringing before you the possibility of the patient's having an advanced renal tuberculosis and yet at the time he presents himself for examination the urine may be clear and free from pus. This phenomenon occurred in one of our cases in which the patient presented himself with a unilateral pyuria of high degree. The tubercle bacilli were demonstrated in the urine in the smear. The patient refused operation and went to his home in the country. He came back three months later with clear urine free of pus. A pyelogram showed much destruction of the kidney parenchyma and our previous diagnosis of renal tuberculosis was verified when the kidney was removed by operation. This fact is mentioned to show that, although a patient may have an advanced renal tuberculosis, the urine may be free of pus at the time he presents himself for operation.

Another serious and important problem that is often difficult to interpret is the presence of the tubercle bacilli in the opposite, but supposedly well kidney. In cases in which the clinical signs, cystoscopic examination, a study of the ureters, and the symptoms permitted of a diagnosis of unilateral tuberculosis, tubercle bacilli have been found from the ureteral catheter specimens of the opposite or supposedly well side, as demonstrated by guinea pig inoculations. This question has recently received the attention of Beer, who cautions against the hasty removal of kidneys because of the presence of tubercle bacilli in the face of evidence involving both kidneys, and especially when there is a focus of tuberculosis in the genital tract. As a possible source of error he mentions the following three:

1. As an excretory phenomenon.

2. As the result of a reflux up the ureter of bladder fluid containing bacilli.

3. As gross contamination from cystoscopes or catheters despite the greatest care.

While I have never had this problem to meet, it would seem to me that one of the easiest ways to obtain information would be by resorting to a pyelogram.

Treatment of Renal Tuberculosis. Let us briefly consider the so-called medical treatment. What, if any, are its advantages over the surgical treatment and what are the results accomplished? It would seem that in order to define their position the adherents of medical treatment should bring forth proof that renal tuberculosis can be cured. There must be of necessity a great deal of care exercised in stating that a patient is or has been cured of renal tuberculosis. What are the criteria upon which we rely in proving that a patient is cured of renal tuberculosis? First, the disappearance of bacilli from the urine. While it is generally believed that the tubercle bacilli are

difficult to demonstrate, this fact is not true. While it may be possible that following medical management the bacilli may be correspondingly difficult to find, repeated examinations and failure to find them by any means, does not allow one to come to the conclusion that the patient has been cured by this or that form of medical treatment. Then, if the guinea pigs fail to show the presence of tubercle bacilli, one can assume that the case is cured?

Second, the diminution or even complete disappearance of pus from the urine may be only a transitory condition. In one instance at least I had the opportunity of seeing a very definite renal tuberculosis without pus in the urine.

Third, the diminution or disappearance of the bladder symptoms may be a temporary condition only. Those of you who are in position to see large numbers of these cases have doubtless had a similar experience: Keyes has reported two cases with the disappearance of symptoms for two years in one case, and in another case for six years. In both cases it was necessary to remove the kidney at the end of the above-mentioned periods of time because of a lighting up of the symptoms. Gauthier's cases were demonstrated as cured at one of the French Urological congresses. The animal inoculations were negative, they were unable to find tubercle bacilli in the urine, and yet within six months there was a return of symptoms so severe that nephrectomy was done. Legueu does not favor tuberculin treatment. He has operated upon patients suffering from renal tuberculosis who were supposedly cured by tuberculin and the removed kidney showed the presence of extensive tuberculosis. It would appear that such case reports, though only few in number, are nevertheless strong proof of the failure of the tuberculin treatment. Pousson reports a case of the disappearance of symptoms for eighteen years and then their return.

If clinical cures are not obtained, is there any anatomical proof that renal tuberculosis can be cured? I think not. In the symposium on renal tuberculosis at the meeting of the American Urological Association held in 1916, E. L. Young, Jr., who dwelt on the subject, said that in the literature on renal tuberculosis he was not able to find any case which showed positive proof of the disappearance of renal tuberculosis. In the same symposium George Dock, who dwelt on the clinical and pathologic possibility of a spontaneous healing in renal tuberculosis without destruction of the kidney, said that his impression from a fairly extensive study, was that true healing of renal tuberculosis is rare. This lesion rarely tends to heal under general treatment, but has a strong tendency to complete destruction of the kidney, in which, however, the disease may be held in for a time with constant danger of a local or general infection at all times. He summarizes as follows:

"Pathologically the possibility of spontaneous healing in tuberculosis of the kidney must be admitted, but it cannot be looked for as a probability in actual practice. Dependence upon general measures of treatment is dangerous on account of the constant tendency to a progressive destruction of the kidney tissue and a descending infection."

If medical treatment as a cure for renal tuberculosis is a failure, is one justified in using this as a temporary measure before operation? Recently we have had occasion in one or two instances to postpone surgical treatment because of an acute complicating condition in the lungs, which necessitated sanitarium treatment, tuberculin, etc., but this was done with the full understanding that at the end of the regime the patient would be subjected to nephrectomy and the treatment was not carried out in lieu of nephrectomy. It seems to me that that is where the danger comes in.

Nephrectomy. From the foregoing remarks it is evident that the treatment must be surgical in all cases of unilateral renal tuberculosis and the earlier that the treatment is instituted, the better for the patient, provided, of course, that the second kidney is present and its function has been established. I agree with those who state that nephrectomy should be carried out just as soon as the diagnosis is made. The objects of nephrectomy are two-fold. First, to remove the infected kidney, and second, to relieve the patient of his or her bladder distress. In other words, to remove the infected kidney with the least possible risk and to give the patient the best possible end-result. I will not burden you with the technic, except to say that the usual oblique incision is made. The incision should be long enough to give a good exposure. The kidney is removed

as rapidly as possible without any unnecessary trauma. The ureter is removed as far as is necessary and all perirenal fat that can be readily removed is removed.

Mortality. The average mortality rate for nephrectomy for renal tuberculosis has been variously stated as from 2 to 4 per cent. While it is a question of immediate importance to the patient, the question of the end-result, namely, the relief of the bladder symptoms, is only second in importance. Experience has shown that by far these results are not all that can or should be desired, as is evident from a study of the post-operative histories of these cases. While in the largest majority of cases there is relief of the painful urinations, the frequency persists and in many instances is just as annoying after the operation as before. It may be said that the symptoms persist after operation as long as they are present before operation. It is evident, therefore, that in order to give the patient the best end-result, namely, complete relief of the bladder distress, the diagnosis must be made early and operation performed as soon as the diagnosis is made.

A STUDY OF THE PHYSICAL CONDITION OF 800 REGISTRANTS IN THE SELECTIVE DRAFT OF 1917*

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The first step in the selective draft of 1917 was taken when, on June 5 of that year, every male resident of the United States and its dependencies between the ages of 21 and 31 was required to register his name, date of birth, place of residence, citizenship and certain other facts pertaining to his personal history.

In round numbers 10,000,000 young men complied with this requirement, all of whom have since been known as registrants.

This, the first step in the draft, acted somewhat like a dredge net in that it caught all classes, all kinds and all conditions in its meshes. When I was a boy, in company with other lads we sometimes went seining in the creeks and sloughs of south central Illinois, and various were the things we would land on the bank of the stream. Among these were craw-fish, tadpoles, turtles, bullfrogs, water snakes, sticks, stones and all too seldom for our wishes, catfish, sun-perch, "goggle-eyes," and now and then a pike, that gamest of fish.

Not unlike my seining experience were the results of the 1917 registration, which brought in the limelight of official knowledge the aristocrat and the vagabond, the preacher and the criminal, the capitalist and the pauper, the banker and the butcher, the occupant of the brown-stone front and the jail-bird, the handsome and the homely, the tall and the short, the lean and the fat, the highbrow and the mongrel, the educated and the unlettered, the wise and the foolish, the fighter and the pacifist, the Caucasian and the Ethiopian, the native and the foreigner, the white man, the black man and the yellow man from the other side of the world; the blind, the deaf and the dumb, the man with a glass eye and the man with an amputated nose, the man without teeth and the man who was voiceless, the man with flat feet and the man with no feet at all, the man who had lost his toes and the man who had too many toes, the man with a game leg and the man with but one leg, the man with a curved spine and the man with a dislocated hip, the man with but one arm and the man with an ankylosed elbow, the man without fingers and the man with redundant fingers.

Such, in part, was the draft of 1917, all races, all colors, all sorts, all conditions, but all between the ages of 21 and 31 and all under the protecting folds of the glorious stars and stripes.

To eliminate the fit from the unfit, the desirable from the undesirable, the available from the unavailable, nearly 5,000 local exemption boards were appointed to have jurisdiction in the localities where the members resided. Upon each of these boards are three supposedly representative citizens, one of whom is required to be a medical man.

In the latter part of June of last year I was apprised of my appointment as a member of Local Board No. 2 for Champaign County. Our board was organized and after some weeks of necessary preliminary work we issued a call for 100 registrants to appear for examination on August 7, another 100 on August 8, and a third 100 on August 9.

Meanwhile the following physicians had been selected for assistant medical examiners, viz.:

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Drs. E. L. Cavanee, C. S. Davis, H. C. Kariher, E. A. Kratz, C. H. Spears and H. V. Wilson, the last two eye and ear specialists. Later Dr. Kariher was commissioned in the Medical Reserve Corps and is now in France, and Dr. Wilson was appointed a member of the District Medical Advisory Board.

The medical force was organized into three teams, and all eyes and ears out of the normal were promptly referred to our specialist assistants.

We had at our disposal three large, well-lighted rooms, and in each of these curtains were so arranged that each registrant could undress and dress in private.

In round numbers 3,000 young men registered in our local district in the draft of 1917, and as we have no mines and no factories to speak of, our registrants for the most part came from the farms, the work shops, the business houses, the several professions and the student body of the University of Illinois.

While the physical examinations began on August 7 of last year, they have continued till the present time, intermittently, however, in the past three months.

In round numbers 800 men were examined, and of these 618, 77.5 per cent., were found fit for military service, and 182, or 22.5 per cent., were found unfit. Of the 182 unfit, 46, 5.75 per cent., were recommended for limited service, and 136, or 17 per cent., were rated unfit for any character of military service.

Of ailments rendering the men unfit for military duty there were: Amputations of leg, 5; of arm, 1; of foot, 1. Ankylosis of ankle, 3; of knee, 1; of hip, 1. Arches broken, 1. Arthritis of knee, 1. Blindness, total, 1. Blind in one eye, 2. Cartilages, loose, in knee, 1. Chest, flat, 1. Chest injury, 1. Chorea, 1. Deafness, total, 1. Deafness, partial, 5. Dislocation of clavicle, 3; of elbow, 1; of hip, 3. Epilepsy, 1. Episapadias, 1. Fistulas, rectal, 1. Feet, injury of, 1. Female type with undescended testicles, 1. Fingers, loss of, 4. Fingers, contracted, 1. Fracture of elbow, 1; of hip, 2; of legs, 3; of patella, 1. Goiter, 1. Hammer toes, 1. Hemorrhoids, 1. Hernia, inguinal, 14. Hydrocele, 1. Heart trouble, including cases of aortic and mitral regurgitation and aortic and mitral stenosis, 19. Keratitis, 1. Liver, enlargement of, 1. Mental deficiency, 6. Moral unfitness, 1. Muscular contraction, 1. Muscular atrophy, 3. Nephritis, 1. Nose, loss of, 1. Paralysis, result of poliomyelitis, 2. Phlebitis, 1. Spinal curvature, 4. Spinal injury, 1. Stomach, ulcer of, 1. Strabismus, 1. Tachycardia, 4. Teeth, loss of, 4. Toes, loss of, 1. Trachoma, 1. Testicle, undescended, 2. Tibia, ulcer of, 1. Tuberculosis, symptoms of, 10. Varicocele, extensive, 2. Vision, defective, 23. Weight, under, 6. Weight, over, 1.

The 46 registrants recommended for limited service had ailments as follows: Ankylosis of elbow, 1; of fingers, right hand, 2. Arches broken, 3. Atrophy muscles of left leg, 1. Blind in one eye, 1. Marked dullness of lungs, 2. Goiter, 1. Hammer toes and partial ankylosis of right ankle, 1. Hearing, 2. Hernia, inguinal, 6. Hernia, ventral, 1. Injury of knee, 1; of great toe, 1. Loss of toes, 1. Mitral regurgitation, 1. Neurasthenia, 2. Overweight, 1. Paralysis; left arm, 1. Result of operation for appendicitis and stone in kidney, 1. Stammering, 1. Tachycardia, 1. Underweight, 1. Varicocele, 2. Vision, defective, 6.

Some of the registrants had more than one of the disabilities named above; for illustration, I recall a student of the University of Illinois who was underweight, had a double hernia and very poor vision. By the way, I was struck with the relatively large number of students with defective eyesight. On the other hand, the students were much more active and supple than the young men from other walks of life—the men from the farms were especially lacking in agility. College athletics naturally has much to do in rendering the university students relatively agile.

The heaviest man we found weighed 254 pounds; the lightest, 97 pounds. The tallest registrant measured 6 feet 3 inches; the shortest, 4 feet 8.5 inches—and this little man was ideal, what there was of him. Both of these men appeared for examination on the same day, but unfortunately we did not have opportunity to place them side by side.

On another examination day we were, however, more fortunate, when one man 6 feet 2.5 inches in height appeared at the same time with another a little below 5 feet. The tall man reached out one arm at right angles, the short man stepped under, and his head did not touch the outstretched member.

The greatest chest expansion was 6 inches and the least, 1 inch.

Of the first 500 registrants examined an average was computed of height, weight and chest expansion. This was found to be, in height, 5 feet 8.75 inches; in weight, 139.75 pounds, and in chest expansion, 3 1/9 inches. In other words, this composite man was 5 feet 8.75 inches tall, weighed 139.75 pounds and could expand his chest 3 1/9 inches. Certainly a good average man.

When we began our work last August we made it a rule to strip every registrant and examine him without reference to any glaring unfitness he might show at first sight. Acting under this rule, I stripped and as carefully as time would allow examined a man who was totally blind; and at another time stripped, weighed and looked over the anatomy of a very filthy negro who wore an especially crude, long-used and malodorous wooden leg.

My work has afforded me some pleasing, much interesting, and no little amusing experience. One day a well dressed, gentlemanly young man with a southern accent called on me at the examination rooms and explained that he had registered at San Antonio, Texas, had sent for permission to be examined at Champaign and was anticipating a reply soon. During the interview it came out that the young man was a violinist in one of our local orchestras, and when he took his leave I, more than half in jest, said, "When you come back, bring your violin, for I am very fond of that kind of music." In a few days the young southerner appeared at the examination rooms with a violin case under one arm and his transfer card in his hand, and after a courteous salutation took out his violin and began playing Suwanee River, then followed in due succession, My Old Kentucky Home, Old Black Joe, The Last Rose of Summer, Sweet Home, and more of the same kind. To say that I was charmed only tells half the truth, for he played with much skill and his fine old melodies put me on a much higher plane than the one I occupied before the rich tones of his violin began to stir my senses.

The examination which followed revealed the fact that my musical registrant was an almost ideal specimen of physical young manhood, and when I told him so he seemed greatly pleased.

Upon taking his leave, he stopped at the door, made a polite bow and said, "You cuh-tinly have been va'y kind to me, suh, and I most hah-tily appreciate it, suh."

I recall examining an athlete, and that I might test his agility and with no thought of his training asked him to jump. "How far?" he asked. "As far as you can," I answered. What was my surprise to see him leap half way across the room, reminding me of nothing so much as a grasshopper.

In examining a man I always make it a point to put him as much as possible at his ease—to make him forget himself and the ordeal through which he is about to pass. To aid in this I not infrequently make use of some very old chestnuts. One of these often came in when the man about to be examined was directed to step behind the curtains and undress. In starting to do as requested the registrant would often ask, "Must I take off everything?" "Yes, everything but your smile," was my unvarying answer; and old and threadbare as was this reply, it never failed to put a broad grin on the countenance of the one most interested.

In testing the hearing I followed the usual course of having the registrant, at the distance of 20 feet, close one ear and repeat after me various words and numbers. Following is the routine I frequently followed: After testing one ear I would ask the man to close it by pressing on the tragus and I would then test the open ear by calling out, "ninety-five," and "ninety-five" would promptly come back in reply. "Mexico," and "Mexico" would be the response. "Germany"—"Germany." "The Kaiser"—"The Kaiser." "Damn him"—"Damn him," the registrant would answer, while a broad smile lighted up his features.

One day a solemn looking individual came before me for examination, and after testing one ear I fell into the usual routine and called out, "Ninety-five," and there came back, "Ninety-five." Then followed "Mexico"—"Mexico." "Germany"—"Germany." "The Kaiser"—"The Kaiser." "Damn him"—no response. "Damn him!"—no response. "Damn him!!"—no response. After my third call the registrant with a very serious visage and in solemn tones said, "I hear you, sir, but my religion will not admit of the use of such language as that."

Like other boards, we examined a number of

men who had registered elsewhere, and on the other hand some of our men had gone to other localities and took their physical examinations there, and the reports on these are embodied in the paper I am now reading before you. The great majority of these outside reports were evidently made by thoroughly competent examiners. However, I recall one in which the man examined was said to have a discharge from his right *year*—and it was spelled y-e-a-r. Further than this, the physician who made the report lives in a university town. Not, however, a university town within the borders of Illinois, I am happy to be able to say.

We found very few attempts at malingering, and so far as my personal experience went I found the great majority of the registrants absolutely frank and honest in all that pertained to their physical condition. Further than this, not a few were fairly bubbling over with patriotism.

I hesitated a good deal before accepting a position on our local exemption board. But finally realizing that this would afford me an opportunity to "do my bit," I made up my mind to do this particular *bit* to the best of my ability; and really it was about the only duty I could render, as I am long past the age-limit for medical military service.

I approached the work with more or less dread and anxiety, but the sequel has shown my fears to be groundless and I have greatly enjoyed all that my duties have involved. It has been a rare opportunity to study "the human form divine," to see human nature in some of its many phases, and finally has been a real school in physical diagnosis. From the physical side we naturally had all shapes, all sizes and all sorts. A few, a very few were so lean and skinny, their muscles so soft and flabby and their limbs so thin and dangling, their shoulders so drooping, their breasts so caved-in, their scapulae so prominent that one could but think, "How fortunate that such as these can have clothes to hide their nakedness."

On the other hand, there were many with such perfection of form, such sturdiness in stature, such shapeliness in body and limb, that it seemed almost a sin to cover with clothes such ideal specimens of manly beauty.

By the way, one of the most perfect men physically that came under my eye was a Methodist minister, who, of course, could not be put in military service.

And now, in conclusion, may I say that although I count myself a patriot among patriots and stand for the most energetic prosecution of the war possible, yet when I think of these ideally vigorous young registrants with their bright eyes and acute senses, their fine complexions and comely features, their deep chests and broad shoulders, their manly forms and well-rounded limbs, all made in the image of their Creator, all in the pride and glory of young manhood, and all the fittest of the fit to become the fathers of the succeeding generation—when I think of how the light in these bright eyes may be put out by the enemy's missiles, of how their supple and shapely limbs may be torn and mangled by his shot and shell, and of how the life in these fine bodies may be smothered and quenched out forever by his deadly gases—when I think of all this mutilation and destruction of man, of man, the finest and noblest piece of the Creator's handiwork, I am driven to exclaim, what a hellish thing is war!

THE CIVIL ADMINISTRATIVE CODE OF ILLINOIS AND THE MEDICAL PRACTICE ACT*

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The administration of the Medical Practice Act in Illinois is now under the jurisdiction of the Department of Registration and Education. This Department is one of nine under what is known as "The Civil Administrative Code." The code, which was adopted by the legislature of the State in the spring of 1917, became operative on July 1, 1917. The dominant principle pervading it is that of centralization of administrative functions and localization of responsibility. Inasmuch as efficiency in the enforcement of the Medical Practice Act is, to a large degree, dependent upon powers granted by the code, it may not be out of place to consider for a short time this new, unusual and

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attractive administrative machinery for state government.

The present constitution of the State of Illinois became operative in 1870. Although amendments have been made to it from time to time, its main provisions are substantially as when it was first adoptel. The astonishing changes which have come in country and commonwealth during a half century of tremendous growth have led to the creation in Illinois from time to time of special boards and commissions, designed primarily to relieve over-burdened constitutional officers from tasks which it was physically impossible for them to perform. In practical experience these officers, boards and commissions, eventually more than one hundred and thirty in number, tended to become semi-independent administrative factors in government, each with its own headquarters, officers and equipment. Almost inevitably conflicts of jurisdiction resulted and with them, naturally, much duplication of effort and expenditure.

About ten years ago, the attorney general of Illinois, in a moment of discontent with existing conditions, gave utterance to an opinion that a satisfactory and effective government in the state could never be obtained until the overlappings of authority resultant from the distribution of the powers of administration among many officers, boards and commissions were ended. This observation, possibly, was the first definite expression which led to the adoption of what is now known as the Civil Administrative Code.

It was not until 1913, however, that an efficiency and economy commission was appointed. It consisted of four senators and four representatives, who were authorized to make an investigation of all departments of the state government, including all boards, bureaus and commissions which had been created by the general assembly, with a view to provide a more perfect system of accounting and to combine and centralize duties. It was hoped that this study would lead to the rejection of much useless machinery and to a reorganization of the state government, with the definite aim of greater efficiency and economy in administration.

The committee was composed of some of the ablest members of the two houses. After organizing and outlining the undertaking in August, 1913, the committee employed as director Dr. John A. Fairlie of the political science department of the University of Illinois. Under his leadership, the advice of a large number of officials and other citizens was taken, after many hearings at which testimony was presented from almost every possible point of view. As a result of the committee's investigations, there was published a report of 1,050 pages, generally recognized as one of the most remarkable documents in the history of state government in this country.

Governor Deneen, and following him, Governor Dunne, called attention to the proposition in their messages, but the gubernatorial campaign of 1916 was made the occasion for placing the code project before the people for general consideration and discussion. Colonel Frank O. Lowden made its championship one of the prominent planks in his platform. Immediately after the people had chosen him to the high position of governor, he took active measures to make the idea a reality. In his inaugural address he emphasized the importance of the administrative reform. He secured the co-operation of many members of the legislature. He devoted long hours of study to the problem. Largely because of his earnest advocacy, the Civil Administrative Code became law.

Its salient feature, as has been stated, is the centralization of the various governmental agencies, with the exception of the Civil Service Commission and certain temporary boards, into the nine departments of Finance, Agriculture, Labor, Mines and Minerals, Public Works and Buildings, Public Welfare, Public Health, Trade and Commerce and of Registration and Education. For each of these departments there is an executive officer, called a director, who is required to devote his entire time to the state work. He is provided with such subordinate assistants as are deemed necessary, the number varying in the different departments.

The code has now been in operation for nearly eleven months. Experience has amply justified those who so strongly urged the administrative reform. The new machinery has worked far more smoothly than its most sanguine supporters had hoped. Naturally, some difficulties have presented themselves. The period of operation is as yet too short to warrant final judgment. Defi-

cits from previous years had to be paid this year and imperative expenditures for long-needed repairs and improvements had to be met. These have combined to handicap the financial authorities. But all who are actively associated in the administration confidently believe that, if given a chance for a fair trial, the code will soon prove its value by substantial financial savings as well as by increased efficiency. The Department of Finance is the keystone to the structure. Its work is certain to show gratifying results. Its officers are giving the most painstaking scrutiny to all outlays, and many kinds of waste heretofore ignored are being effectively checked. They are studying the expenditures of every part of the state government with the purpose of preparing a detailed budget under which the state's business may be conducted in a systematic manner.

Perhaps it ought to be said that the centralization of administration under the code is not complete, because, outside of its juridiction, there are certain so-called constitutional offices, such as those of the secretary of state, the auditor of public accounts, the state treasurer, the superintendent of public instruction and the regents of the state university. Should the campaign for a new constitution, adapted to the needs of a great state such as Illinois has grown to be since 1870, be successful, one outcome of a constitutional convention might well be the inclusion of the duties of these officers under similar proper departments. In actual practice, however, there has been complete harmony between the constitutional officers and the code ones, so that the entire governmental mechinery at Springfield has been working smoothly in the direction of notable administrative achievement.

Limitations of time do not permit further consideration of the code in its entirety. It is a remarkable state document. It represents a notable advance in political science. The plan of organization of each department is extremely interesting. The distribution of powers among the departments, the internal workings of the departments, and the great variety of the problems requiring administrative solution are alike attractive. The widespread interest awakened by the code throughout the country and the reports that several other states are giving serious consideration to the adoption of a similar plan of government, are suggestive of what is in store for the one who will study carefully the thirty-seven pages of this epoch-marking legislative act.

The special concern of this society is in the administration of the Medical Practice Act of Illinois. In the reorganization scheme the licensure of physicians and midwives, formerly in charge of the State Board of Health, was placed in the Department of Registration and Education. Something about this department, therefore, may be of interest.

While the double name registration and education seems to imply divided activity, a closer survey of the powers and duties of the department shows that the thought of education is the dominant one. The word "registration" relates to the administrative work associated with all those professions and trades of whose members the state requires a license. The department has jurisdiction over about a dozen different lines of endeavor, including those of the architects, barbers, chiropodists, dentists, embalmers, horseshoers, midwives, nurses, pharmacists, physicians, plumbers, structural engineers and veterinarians. In its main office in Springfield, it has a staff of twenty-five persons whose work is being so organized as to distribute responsibility most effectively and to secure accuracy, efficiency and promptness in administration.

The oversight of the licensing features of the activities of the department is placed in the hands of an official called the superintendent of registration. He is charged with arranging for the necessary examinations as provided for in the statutes, with furnishing of adequate assistance for the examinations, with the notification of the successful candidates, with the keeping of the records and files of certification, and with the large amount of correspondence relating to licensure in the several lines. Inasmuch as all the laws which regulate licensure provide for the evaluation of credentials, both of preliminary education and of professional training, the division of registration has among its duties the collection of the essential preliminary information about applicants and the investigation of their qualifications for examination.

So, naturally, the department must concern itself with the establishment of standards and the

approval of both the schools themselves and their courses of instruction. If the authority given by the code and by the several practice acts should be invoked to its full degree, the power of the department over schools of all grades and types would prove to be very great.

The word "education" in the department's title, therefore, does not imply an entire change of thought from that of "registration." It may, however, be taken to refer to certain types of higher education which are carried on under state auspices, and which are professional, investigational, or strictly scientific in this nature. The five normal schools which heretofore have been controlled by separate boards of trustees, are now placed under the jurisdiction of the department, with a single board of which the director of registration and education is chairman. Grouped under the department, also, are the four scientific surveys, located at Urbana, in connection with the State University, namely, the State Geological Survey, the State Water Survey, the State Natural History Survey, and the State Entomological Survey. For the study of the needs of these four surveys and the development of their work, a special advisory board of scientists, called "The Board of Natural Resources and Conservation" and representing the different fields of research touched by the surveys, has been provided, the director of the department being its chairman. The department has jurisdiction also over the State Museum, located at Springfield. For advice regarding its management there is a board composed of specialists representing the five different lines of activity with which the museum concerns itself, namely, botany, ethnology, zoology, manufacture, and museum administration.

The members of these advisory boards were nominated to the governor by the director with no consideration in mind whatever, except to secure individuals of the highest character, entirely regardless of political affiliation, whose names would carry weight wherever mentioned. The board of natural resources and conservation, for example, is composed of Profs. Thomas C. Chamberlin and John M\ Coulter of the University of Chicago, both men of national reputation in their respective fields of geology and botany; Profs. William Trelease and William A. Noyes of the University of Illinois, equally conspicuous in botany and chemistry respectively, and Mr. John W. Alvord of Chicago, an engineer of wide reputation. On the board of museum advisors are Edward W. Payne, one of the best known and most highly honored citizens of Springfield; Messrs. Charles L. Owen and Charles F. Millspaugh of the Field Museum of Natural History; Prof. Henry B. Ward of the University of Illinois, and Mr. N. H. Carpenter of the Art Institute of Chicago. The normal school board, in like manner, is made up of selected men of exceptional fitness for their task, including such distinguished individuals as J. Stanley Brown, principal of the Joliet Township High School; Leroy A. Goddard, President State Bank of Chicago; William B. Owen, principal of the Chicago Normal College; Messrs. Frank E. Richey of La Salle; Henry A. Neal of Charleston; Elmer T. Walker of Macomb, Roland Bridges of Carbondale, Charles L. Capen of Bloomington, and John C. Allen of Monmouth, with Francis G. Blair, state superintendent of public instruction, as secretary. The department, in its administration, is greatly strengthened by its ability to command the assistance and advice of men of such pre-eminence. The magnitude of the educational work of the department, if expressed in terms of annual appropriations, is such as to make it fairly comparable with similar special departments in a great American university.

The controlling idea behind the Civil Administrative Code has been stated to be combination and co-ordination with localization of authority under responsible individuals. There is no doubt that the personnel of the directorate is a most important element in the successful working out of the plan. If the code lent itself to the machinery of political organization, and the selection of officers were made purely for partisan reasons, special fitness for a given task being made entirely subordinate, there might reasonably be fear for the result. The scope of the activities of the several departments, however, is so broad as not only to require the full time service of individuals of recognized responsibility and position, but also to present to them for solution problems demanding the highest talent, and worthy of a strong man's best endeavor.

The code specifically provides that the director of registration and education, the assistant director and the superintendent of registration

shall not be affiliated with any college or school of medicine, pharmacy, dentistry, nursing, optometry, embalming, barbering, veterinary medicine and surgery, architecture or structural engineering, either as a teacher, officer or stockholder, nor shall they hold license or certificate to exercise or practice any of the professions, trades or occupations regulated.

The reason for this restriction is apparent. Absolute impartiality and exact justice are more likely to be secured where personal interest or possible professional jealousy are absent. In the working out of the code plan there has been marked a notable change of attitude toward the law on the part of violators, whether intentional offenders or chance ones. The prospect of being prosecuted by a great department of a state government, the executive officers of which are not members of the profession involved and whose main interest in the case is that of the enforcement of the law of the state, appears to be much more feared than was the danger of trouble with members of a board connected with the same profession. This has had many illustrations since last July. There is no doubt that every practice act of Illinois has become far more effective than it ever has been, because it now has behind it the machinery, the resources and the administrative power of a state department.

Another restriction of the code provides that, whenever the several laws, regulating professions, trades and occupations which are devolved upon the department for administration, so require, certain enumerated functions and duties shall be exercised. These relate to standards of admission, curricula of schools and colleges, rules and regulations of examinations, conduct of examinations, the granting and revoking of licenses. It is definitely declared that, where the law of a profession, trade or occupation so requires, none of these enumerated functions and duties shall be exercised by the department except upon the action and report in writing of persons designated from time to time by the director to take such action and to make such report.

This restriction is a safeguard against personal inefficiency, arbitrariness, or venality on the part of the director, but it also is designed to indicate clearly the pervading idea of the code, that the duties of former state boards have passed under the administrative control of a department under the code. The words, "designated from time to time" are important. There is no exact term of service for a member of an examining committee. The advantage of the limitation has already been shown in a number of cases, where trial revealed the fact that the individual selected was not well chosen. The objection to this plan is made, that there may be lack of continuity of policy where there is uncertainty of tenure. This is obviated by the possibility of reappointment of those whose worth has been demonstrated in actual experience. The danger in the personal appointment feature is the danger attending the entire code plan. An individual honored with selection as director of a department, or, for that matter, given any important task to perform, either will, or will not, rise to his responsibilities.

A third safeguard declares that in making the designation of persons to act for the several professions, trades and occupations, the director shall give due consideration to recommendations by members of the respective professions, trades and occupations, and by organizations therein.

Working under these general limitations, the department has been successful in establishing friendly relationships with the interested leaders of practically every one of the professions and trades coming under its jurisdiction. The practice acts have been enforced strictly. The examinations have been above suspicion. The committee members have worked faithfully and promptly, and generous commendations have come from many influential citizens who have expressed their opinion, that the laws in which they have been specially interested have been interpreted and enforced in a highly satisfactory manner.

The code provides for the medical practitioners, embalmers, and midwives, a committee of five persons, all of whom shall be reputable physicians licensed to practice medicine and surgery in this state, no one of whom shall be an officer, trustee, instructor or stockholder or otherwise interested directly or indirectly, in any medical college or medical institution. For the purpose of preparing questions and rating papers on practice peculiar to any school, graduates of which may be candidates for registration or license, the director may designate additional examiners whenever occasion may require.

Great care was taken in the selection of the first committee to work under the new plan. The

department officials cherished the idea of having a certain degree of continuity between the proceedings of the new department and those of the old State Board of Health. They wished to have the different points of view of medical organizations represented. Above all, they had an ambition to secure a group of men whose names would command respect, and who, in themselves, would be an assurance to the friends of medicine that, under no circumstances, could there be retrogression under the changed conditions of the code. After a sifting of a large number of names presented for consideration, those chosen were Dr. John A. Robison of Chicago, former president of the Illinois State Board of Health; Dr. W. L. Noble of Chicago, former president of the Illinois State Medical Society; Dr. Leon C. Taylor of Springfield, for many years a member of the legislative committee of the Illinois State Medical Society; Dr. Carl E. Black of Jacksonville, all of whom represent the regular school, and Dr. G. M. Cushing of Chicago, the secretary of the Illinois Homeopathic Association, who represents homeopathy. These physicians have served the state with rare fidelity and earnestness, making great personal sacrifices to aid the department in its important work for the profession of medicine.

There was an added degree of importance in the choice of the first committee because of the fact that a new medical practice act, marked by many advances, went into operation the same day the department began its work. The new practice act raises the minimum requirements of preliminary and professional instruction and empowers the Department of Registration and Education to establish additional standards. It gives the department power to revoke licenses for any one of nine reasons. It practically bars from the state the limited medical practitioners and places notable restrictions on their future licensure. It affords abundant opportunity for toning up the whole medical profession of Illinois, in case the department can have the support of the better element of citizenship for its aggressive acts. No stronger appeal could have been made to the ambition of anyone than that which was made to the director of registration and education July 1st. Under the law, as has been said, neither he, nor the assistant director, nor the superintendent of registration could be a member of any one of the processions or trades for which the State requires a license. They were obliged to approach the problems of administration under many limitations of ignorance. Mr. F. C. Dodds, superintendent of registration, had the advantage of an experience of thirteen years as secretary of the Illinois State Board of Pharmacy, some of whose problems were like those of medicine. He had the added equipment of unusual familiarity with the statutes and an exceptional knowledge of the important legal decisions bearing on licensure. The department also profited from the acquisition of two of the clerks of the former State Board of Health who were best informed on the licensing problems presented to that body. Whatever handicap of ignorance the officials of the department had was more than overcome by the earnestness of their purpose to so carry out the spirit of the several laws as to win the approbation of those particularly concerned with them, and better yet, to find that self-approbation which, after all, is the supreme thing when sincerity rules the heart.

Something in detail about the work of the department during the last eleven months may have interest. Three examinations have been held: One in October at Chicago, at which time 148 candidates presented themselves; of this number 126 passed, 20 failed, 1 withdrew and 1 was incomplete; another in February at Springfield, where 65 candidates presented themselves, 50 of whom passed and 15 failed; and a third in March at Chicago, when 62 candidates appeared, 50 of whom passed and 12 failed. The totals for the period since July 1st last, therefore, show 275 candidates, of whom 226 passed, 47 failed, and 2 did not complete the work. 237 licenses have been issued since July 1, 1917, of which 27 were through reciprocity and 210 by examination. The discrepancy in the figures between the number of those who passed and the number of licenses issued is explained by the fact that there are always cases where a license is withheld pending the payment of the required license fee. Those licensed by reciprocity came from the following states: Missouri, 12; Michigan, 3; Indiana, 2; Wisconsin, 2; Nebraska, 2; Minnesota, 2; Ohio, 2; Kentucky, 1; Maryland, 1.

In the March examination a new feature was introduced in the form of a practical test. Through the courtesy of the officials of the Cook County Hospital, the facilities of that great

institution were placed at the disposal of the department. Both examiners and examined entered into the spirit of the new arrangement with hearty interest. The results of the experiment were so gratifying that it was decided to make this a permanent feature of the examination plan. At the same time it was determined that no license by reciprocity should issue except after the presence of the candidate before the examination committee and the passing of a satisfactory practical test. The department believes that these two advances are worthy of note by all friends of medical education. After careful consideration the examining committee has determined to make the entrance into the profession more difficult by closer scrutiny of the written and oral reports of the candidates. They share with other representatives of the department in the earnest desire to make the Illinois license in medicine most honored of all state licenses because most carefully guarded.

The records of the department show that, under the first medical practice act of 1877, 18,626 individuals were licensed, 16,905 by the presentation of diploma, 1,236 by years of practice, and 485 by diploma and supplementary examination. Under the acts since 1899 there have been licensed by examination and by reciprocity, 11,304, making a grand total of 29,930. How many of these licenses are active at the present time, nobody knows. The department has no check upon them, as it has upon licentiates in other lines by means of an annual registration requirement. In 1916 the American Medical Association made a computation which placed the number of living physicians in Illinois at 11,600. Counting for deaths and removals, and estimating additions by examinations, there probably are about 12,000 at the present time who hold Illinois licenses. Ignorance upon this vital matter of administration places the department under a great handicap. It does not have any means of knowing where its licentiates are, or what they are doing. It receives a daily press clipping service which helps to some degree in checking deaths and removals. But its inspectors find imposters who are using the licenses of honorable practitioners long since dead; charlatans who are claiming to be authorized representatives of patriotic physicians who are "over there" ministering to the wounded and dying among our soldier boys on the far-flung battle line; fakers, quacks, irregular, illegal, immoral, unethical, untrained men, who grow rich on gullible humanity and trail in the dust and the dirt the banner of one of the great professions. To be asked to enforce a medical practice act without having the machinery for ascertaining who is entitled to its privileges and who is ignoring its restrictions at best is a difficult situation. The advantages of an annual registration upon the payment of a nominal fee as an effective weapon for protecting the profession and for aiding in the prosecution of pretenders have already been suggested to some of this company.

One of the first problems presented to the department after its organization was the plea for restoration of two medical colleges, namely, the Jenner Medical College and the Chicago Hospital College of Medicine, institutions which had been declared by the State Board of Health to be no longer "in good standing" with the licensing authorities of the state. A large amount of time and attention has been given to the consideration of these petitions. The institutions were reinspected, one of them twice. Several meetings for conference were held, attended by representatives of the department, administrative and professional, and by those interested in the colleges. No change in the status has as yet been made. In one case mandamus proceedings which were begun have not been prosecuted.

An encouraging event of the year was the union of the Bennett Medical College of Loyola University with the Chicago College of Medicine and Surgery. This amalgamation reduced the number of recognized medical schools in Illinois to five, namely, the University of Illinois College of Medicine, Northwestern University Medical School, Loyola University College of Medicine, Hahnemann Medical College, and Rush Medical College. Illinois has made splendid advances, evidently, since the day when its fourteen medical colleges, five or six years ago, led to the use of the words, "the plague spot of medical education in America." Each of these five colleges has been visited and inspected by the department during the year, one of them twice. The records have been searched with care by a special representative of the department. Where irregularities or improper methods have been discovered, the facts have been called to the attention of the

officials of the institution affected and prompt promises of rectification have been made. New rules and regulations connected with the Medical Practice Act have been established and put in force after a conference participated in by the administrative officials of the department, by the members of the medical examining committee, and by the deans and secretaries of the five schools. Each of the five institutions, through the proper official, has indicated in writing its intention to abide by these regulations thus agreed to. The department on its part has declared its express determination to enforce the rules and regulations without fear or favor.

The grossly improper and unethical attitude of certain practitioners of medicine was early called to the attention of the department. When an abundance of evidence had been secured, in which the department was greatly aided by the *Chicago Tribune* and by other helpers, a number of such individuals were summoned to appear to show cause why their licenses to practice medicine and surgery in Illinois should not be revoked. While the evidence presented in a number of instances was amply sufficient to satisfy anyone that the strict requirements of the law and the ethics of the profession were being contemptuously ignored, in but three cases did the department feel warranted at the time to take drastic action, possibly involving legal procedure against it. On February 7, 1918, it revoked the licenses of Dr. Isaac W. Hodgens, Dr. Leon Thompson Burgess, and Dr. Arthur L. Blunt, all of Chicago. Two of these sought, through certiorari proceedings, to review the acts of the department relating to them, but the court declined to grant their pleas for the privilege of this writ. The department is watching these individuals closely and will prosecute them vigorously should they be found to be continuing in the illegal practice of their former profession. In the other cases mentioned, where no action was taken at the time, conduct is being carefully observed. Since the first group of offenders was summoned for a hearing, information has been filed regarding about twenty more physicians in different parts of the state. Arrangements have already been made for summons to certain of these to appear and show cause why their licenses should not be revoked. The department earnestly seeks the cooperation in this work of all reputable practitioners and, particularly, of local medical societies. It hopes, at future meetings of this society, to have the pleasure of reporting still other revocations, knowing clearly how large the number is of those whose professional career should have such sharp termination, so far as Illinois is concerned.

The department has been active in the prosecution of physicians who have been violating the law and of unlicensed persons who have been practicing medicine in Illinois. A brief summary shows that eighty-two cases have been filed in courts in all sections of the state. Thirty convictions have been secured, forty cases are still pending, twelve have been dismissed, usually on payment of the costs. A classification of the penalties which have been secured shows one at $20.00 and costs; twelve at $25.00 and costs; four at $50.00 and costs; one at $75.00 and costs; two at $100 and costs; one at $150.00 and costs; two at $200.00 and costs; one at $50.00 and costs and thirty days in jail; one at $100.00 and costs and six months in jail; one at $200.00 and costs and one year in the House of Correction; one at six months in the Bridewell. Outside of Chicago the department has lost but two cases. Until recently no support was given by the Chicago Medical Society, which, however, has appointed a grievance committee from which noteworthy activity is hoped. The St. Clair County Medical Society has been of great assistance, the aid of Dr. Lillie of East St. Louis being deserving of special mention. The state's attorney of St. Clair County asked the department to assign one of its inspectors to that county to assist him. In four months he filed over 200 cases, against physicians, midwives, druggists, dentists and representatives of other professions, trades and occupations. The department lost but one of these cases. It is a shining illustration of what may be accomplished with the aid of local organizations and the cooperation of state's attorneys. By contrast it calls attention to other parts of the state, as corrupt as St. Clair County was before the great clean-up, where the state's attorney will not act, and where the county medical society will not help in creating a public opinion which will force such an official to do his sworn duty.

If the department can enlist the aid of organizations like this, it can accomplish notable things

in the course of the next year. Its ambition is to help in every possible way toward the upbuilding of medicine. Its aim is to enforce the law regarding medicine as strictly as it may. It looks forward in the near future to the completion of lists of approved schools of various grades, from the public school through the college to the professional school. It plans a similar study and classification of hospitals. It will have for the benefit of the medical profession the results of inquiries now being made in connection with other professions, whose laws it likewise is called upon to administer. The worth of this larger fund of knowledge illustrates again the value of the department under the Administrative Code as compared with previously existing boards, whose work was limited to a smaller field.

The department needs two new bits of machinery. One, as already suggested, is an annual registration fee. For this the argument in brief is: It would enable the department to keep in touch with legal practitioners. It would be a great aid in keeping a correct roster of addresses. It would afford opportunity to discover cases of individuals using the licenses of others who have died or have left the state or from whom licenses may have been stolen or purchased. It would enable the department better to control some of those unethical practitioners whose actions bring discredit upon the profession. It would furnish funds for the department at slight cost to the individual physician. Its willing payment would provide a splendid argument against the imposition of a larger annual state license fee, easily possible in these days of regulation, when governments are seeking everywhere for increased opportunities for raising needed funds. It is strictly in line with the best practice in other professions. It is favored by many of the closest observers of medical problems in the country.

The other desired advance is a state certificate, to be issued by the department to every candidate for admission to a medical school in Illinois, showing that his credentials of preliminary education have been examined and approved. If this precautionary step were taken, the unfit and unprepared would be kept out of the medical schools, and nine-tenths of the difficulties which have caused trouble and scandal would be removed.

In connection with every profession and trade nowadays there is a demand for greater efficiency and consequently for better preparation. This demand is a reflection of the national spirit as it has been stimulated by the lessons of the great war. Many an applicant for position in army or navy has been sent back home branded unfit. The calls for men skilled in particular crafts have been unanswered, because of the lack of such workers. Our equipments have been defective, our curricula inadequate, our instructors poorly prepared and uninspiring, our student methods slipshod and lazy. In the hour of national peril and world testing, our people have been weighed in the balances and found wanting. When the war is over, Americans may swing back into their paths of ease in some respects, but they are not likely to tolerate for the future the ineffective machinery for education, whose faults have been made so apparent in recent months.

So those who are working toward better standards for professional preparation in Illinois have determined to share in this national movement for increased efficiency. They aim to make requirements for licensure more rigid, so as to eliminate the unfit; to demand more careful attention of college officials to the records of student work; to scrutinize with greater pains credentials of preliminary preparation. Thus they hope better to protect the individual who spends his money for training, and more important yet, to protect the people against the impositions of unworthy and untrained practitioners. These ambitions attained, it goes without saying that the medical profession in Illinois will be placed upon a plane of honor higher than ever before and more worthy of an imperial state like ours.

As director of the Department of Registration and Education, I can assure this society with confidence, that the department will not be satisfied until the requirements for medicine here are as high as in any other part of the world.

The department believes it has faithfully administered the stewardship entrusted to it by the Medical Practice Act. It has confidence that it can accomplish far more during another year, if it has behind it the cordial endorsement and the united support of the membership of this great society.

THE EXOPHTHALMIC GOITER

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So much vague, mystifying literature has been written about "Exophthalmic Goiter," that one hesitates to discuss it. The term exophthalmic goiter as popularly understood by the laity and many physicians includes so many different conditions that confusion is inevitable. I will not undertake to define and limit its applications in this paper, but will use it to designate any serious disturbance in the endocrine system with obvious thyroid involvement. The majority of women during pregnancy have temporarily an enlargement of the thyroid. The majority of girls have a simple diffuse enlargement at puberty. If excessive in size, coming on rapidly, somewhat tender to the touch and with symptoms of hyperthyroidism, including heart disturbances and some protrusion of the eyes, it is a typical case of acute hyperthyroidism. Nearly all of these cases that come on at puberty are caused by a small fetal adenoma cyst or other tumor in the substance of the gland. These simple tumors frequently commence to enlarge at about the time of puberty and by irritating the adjoining gland tissue, cause congestion and swelling of the entire lobe and sometimes of the lobe of the opposite side also. Secretion is stimulated. Acute hyperthyroidism develops, and if severe enough, exophthalmus will result. As the tumor enlarges the gland substance over some point becomes thinner and the tumor is forced out onto the surface of the gland. When the tumor reaches the surface the pressure in the gland tissue is removed, irritation and congestion of the gland subsides, the hyperthyroidism ceases, the patient recovers entirely from all systemic effects.

The tumor is still present under the capsule at the surface of the gland.

Frequently the gland substance adjoining this tumor goes on to cystic degeneration. Small cysts form at this point and may form throughout the entire gland. With the development of each cyst the irritation may return, with the resulting congestion, inflammation, hyperthyroidism, some exophthalmus and then regression of the process. If such attacks continue hyperplasia or some type of degeneration may occur. In fact, nearly every type of degeneration and tumor growths is sometimes found in the same gland. Also the same case may have, early in its progress, repeated attacks, each one a typical picture of hyperthyroidism with exophthalmus, followed by periods of regression, and later after some permanent exophthalmus has occurred and the gland has undergone some degeneration that has destroyed nearly all the normal tissue, a deficient amount of thyroid secretion is elaborated and hypothyroidism with toxemia may develop. Sometimes hyperthyroidism and hypothyroidism with thyrotoxicosis from abnormal secretion of the gland may be present at the same time. Therefore we use the term exophthalmic goiter as it is popularly understood. It includes the simple exophthalmic goiter, the chronic exophthalmic goiter, Graves' disease, the hypothyroid, the thyrotoxic and the tumor of the gland with complications, such as excessive pressure symptoms, heart lesions, kidney disease, disease of the pelvic organs, pulmonary tuberculosis or asthma.

The tendency and probable course of every goiter is first hyperthyroidism, with irritation of the circulatory system and extreme systemic stimulation, then some form of degeneration causing destruction of the gland tissue, lessening the amount of secretion, and later hypothyroidism with a small amount of normal secretions, but toxemia from the abnormal secretions elaborated. Other forms of degeneration in the gland are often coincident with it. Hyperplasia may develop in the gland and a large diffuse goiter with intense symptoms develop. Hyperplasia may also occur with tumor formation present in the gland. Sometimes it occurs with fibrosis of the gland, and a small, hard gland is present with severe symptoms. With all these various types of severe disturbances of the thyroid included in the general term of exophthalmic goiter, cardio-vascular disturbances are always found. There is no case of active goiter without cardio-vascular disturbance. The diagnosis of goiter often rests upon the examination of the heart. Goiter causes endocarditis, premature contractions, auricular flutter, auricular fibrillation and myocarditis. Removal of goiter benefits or cures these conditions when it has caused them. Heart-block and defects in transmission of impulse are not caused by goiter and are not benefited by removal of a

goiter that may be present. An understanding of the disturbances of the mechanism of the heart is of recent development. In deciding what to do with serious goiter cases a correct and definite understanding of the organic lesions and disturbances of the heart is necessary. The same importance should be attached to them that would be given them in estimating operative risk for any other condition. But, with goiter it must be absolutely determined whether endocarditis, premature contractions, auricular flutter, auricular fibrillation or myocarditis are present. When you have determined exactly the condition of the heart then you can decide with precision as to what to do at this particular time for this particular exophthalmic goiter.

Medical treatments, injections, ligation of the arteries, x-ray, mechanical therapy, Christian Science, change in climate and various other things have all been tried and been abandoned as curative methods. Excision of the diseased part of the gland does cure with a certainty. It is not a question of acute increasing exophthalmus or a decreasing exophthalmus; whether it is Graves' disease, hypothyroidism, thyrotoxicosis or complicated tumor of the gland. The question is, will the condition of the heart permit of excision of a part or all of the diseased portion of the gland? No other treatment has been of permanent value. Therefore the only question is, can this patient stand excision of the goiter?

It is an almost universally accepted belief that the exophthalmic goiter should not be operated upon during the period of acute exacerbation; that any operation performed while the symptoms are developing is liable to result seriously; that if the operation is performed while the symptoms are decreasing the result is almost sure to be satisfactory. This theory has arisen from the fact that auricular flutter is often present during the period of exacerbation and that auricular fibrillation has usually occurred by the time that the exacerbation has ended. It must be estimated by the condition of the heart whether the operation can be done with safety or not. The prognosis as to the ultimate result also rests almost entirely upon the condition of the heart at the time of the operation. If the heart is in good condition, the indication is for immediate excision of at least a part of the gland. Endocarditis is always present early and is accompanied by a certain form of restlessness and some emotional disturbance. Sometimes with the acute hyperthyroidism some exophthalmus will be present, endocarditis will be fully developed, the heart action somewhat rapid but the rhythm regular and perfect. The immediate improvement following operation in these cases is very spectacular. If auricular flutter is present immediate operation is not to be thought of; rest in bed with x-ray treatment, injections in the gland or ligation of the arteries are indicated. If the flutter persists the patient should be given digitalis to the limit. When the auricular flutter becomes an auricular fibrillation the digitalis should be discontinued at once. Usually the fibrillation will subside and the auricle commence a regular normal contraction again. The judgment of the observer must then decide whether it is best to operate at that time or keep the patient entirely at rest and wait several weeks before operation. The earlier in the stage of the disease the more indication for immediate operation; the later the stage of the disease the more indication for giving the heart time to recuperate. The earlier the stage of the disease the sooner you may expect another attack of hyperthyroidism and a return of your flutter.

Several years ago we used hot water injections in a series of over one hundred cases. The hot-water injection, if given with proper technic, will stop the secretion forming in part of the gland *temporarily*. In some cases it gives great temporary relief. If enough hot water is injected to accomplish the desired result considerable pain is usually caused by it. As a curative agent it has been a failure. It is of great value in preparing patients for operation. Recently we have used injections of quinine and urea hydro-chlorid for this purpose. Enough necrosis and inflammation to stop the secretion from a portion of the gland is caused by it. The result of the injection depends upon the amount of irritation and of tissue destroyed. The pain following the injection is not so great as that following the injection of boiling water, the technic is *much* easier. Toxic goiters and those with hypothyroidism are not benefited as much as those with hyperthyroidism. Ligation of the superior thyroid has been a favorite procedure in some large clinics. We have had better results from the injection treatment than from the ligation of the superior thyroid artery. The scar left from this

procedure is dreaded by a great many. Its location high in the neck makes it impossible to cover it up. We very much prefer ligation of the inferior thyroid. By going externally to the sternocleido-mastoid muscle, ¾ inch above the clavicle, and making an incision ⅞ of an inch long, through the skin and superficial fascia, retraction of the sternocleido-mastoid muscle inward and upward brings your small incision right over the inferior thyroid between its origin at the thyroid axis and where it goes under the carotid. The operation at this place is easier than the one of ligation of superior thyroid, and we get as much benefit from ligation of one inferior as we do from ligation of both superior thyroids.

The two main causes of cardio-vascular diseases are focal infections and goiter. By recognizing focal infections and their importance, and by eliminating them, we have reduced greatly the amount of cardio-vascular disease. Yet at the present time cardio-vascular disease is the greatest cause of death in the registration area.

Of the patients that we have seen during the last five years having cardio-vascular disease, 92 per cent. have been traceable to goiter. Certainly goiter is the main cause of cardio-vascular disease. By recognizing goiter early and by excising goiters early, we can almost eliminate the present large death rate traceable to goiter.

DISCUSSION

Chairman: The doctor's paper is very important, and I regret that more are not here to hear it. He spoke of a case of preliminary treatment, using x-ray until the heart condition subsided and then to operate. I have seen cases treated intensively with x-ray and then come to operation, and the operation was very difficult, and the attending surgeon made the statement that the x-ray rendered the difficulty of operation much greater. I would like to ask him if this is true, and if he has had this experience.

Dr. Haeberlin (Chicago): It seems to me that it is summed up very well when we examine a patient with enlarged thyroid: have we or have we not a goiter, an internal secretion that is poisonous?

If an individual has a thyroid throwing a poison into the circulation, immediately we get two classifications; an individual with enlarged thyroid, and an individual on the other side in which the thyroid is throwing off a poison that is malignant, and these cases are called thyrotoxicosis. Sometimes this poison has a predilection for the cardio-vascular system. We know that many times individuals have vague nervous symptoms due to thyrotoxicosis. The size of thyroid has nothing to do with the amount of toxic absorption. Some are of the most fatal types, others are mild—the size has nothing to do with it.

Now, another thing, we don't know what that poison is. It has never been isolated. Ordinarily we figure that we do our thyroidectomy on the enlarged portion of the gland. Why? Because ordinarily we think the enlarged portion is the portion wherein the trouble occurs.

Now, when you get a real case of thyrotoxicosis, what do you do? There is no medication that does any good. The old-time treatment used to be, and I have treated a lot of them, we put them to bed, put an ice bag on the heart, and we kept them on a milk diet and removed all external irritations. We gave them rest. It is true, while you keep your patient under such a line of treatment, he improves a little bit, but just as soon as you put that individual where he has the ordinary stress of life, where he goes out and tries to meet the world, he will have a recurrence of his symptoms, and when you get a genuine case of thyrotoxicosis, the only thing to do is to operate, remove the thing that is making the poison.

Now, when do we operate on these cases? We never operate when the patient is getting worse. Another thing—never operate when the kidneys are involved enough to produce an edema, and never operate when the cardio-vascular compensation is lost, or the heart dilated. Watch your patient and give him absolute rest, as Dr. Crile has brought out very forcibly in his works. If you get the cases at a time when they have a loss of compensation, and the kidneys are full of albumin, and the patient has a dilated heart, with proper treatment, it is just a matter of a week or ten days until the heart will come down fifteen to thirty points, the tremor will be controlled, the edema will disappear and the urinary secretion is better. Then with our modern technic, it seems to me that the thyroidectomy, as practiced now, is the operation of choice.

I have done a lot of ligations, and this boiling water injection may be all right; but my experience is that if you do that you will have to re-operate later on. The rest in bed with the ice bag is sufficient to tide the patient along, so that you can do a thyroidectomy; done under the modern technic, and done accurately and quickly, your patient gets along very nicely.

Dr. Dikeman (Springfield): I would like to ask the doctor if it is justifiable to operate on a case, say, from sixteen to twenty-five years old.

Dr. Sloan: X-ray exposure does seem to assist in reducing the simple thyroid case. We use it. It certainly helps to hold the patient over for a little time and keep the patient in bed.

The doctor brought out the main point when he said that you must keep these patients in bed.

I feel that the improvement in any goiter case is just in proportion to the improvement in the condition of the heart. If at the time of the operation you make an accurate diagnosis of the exact condition of the heart, and that means the mechanism of the heart as well as the organic condition of the heart, you can tell how the case is going to terminate.

They always feel better after they have been operated on. I have yet to find one that isn't glad that he or she had the operation, and when you come to consider the fact that the majority of these operations are entirely successful, I think you will feel them well worth while.

If you only take out a part, one year or two years afterwards, or six months afterwards, that patient comes back in good condition and ready to have the operation completed, and you need have no fear that that patient will come back to you and reproach you for not doing it all.

Now, the ages. We have operated on several patients under twelve, taking out the tumor that is irritating the rest of the gland. Most of the patients will agree to having a small incision made. It isn't much of a job, and you will save the patient a thyroidectomy in the future by this.

HISTORY OF THE ILLINOIS STATE MEDICAL SOCIETY

PRELIMINARY STATEMENT

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The Illinois State Medical Society bears the distinction of being the first scientific organization in Illinois. The formation of a state organization of the medical men of Illinois was foreordained. Many of the Eastern States had societies, some of them, like New Jersey, Connecticut and Massachusetts, dating from the eighteenth century, while New York and others were organized early in the nineteenth century. The states west of the Alleghenies were slow in organizing, and we may well take a few lines to give the probable explanation for this. In doing this let us remember the scattered population and the small number of large towns. Chicago had 20,000, Quincy 6,000, Peoria 5,000, Springfield 4,000, Jacksonville 3,000 in 1850. Let us remember the scarcity of good money. Let us remember the shock to state pride given in the 40's by the fiasco of internal improvement and the attempted repudiation of the state debts. Let us remember the small number of educated medical men and the laborious, even dangerous conditions under which they practiced. Roads were mere trails. Streams were unbridged. Hotel accommodations were vile. Good animals for transportation were scarce. Dr. Pasfield has often told me that during certain seasons of the year the heat was so stifling and the insects so numerous and irritating that horses could only travel by night. The swamps were undrained; clouds of mosquitoes from them invaded the rudely constructed homes, and malarial fever abounded. Nor was the malaria which the mosquitoes carried the only disagreeable part of the beasties. Usually for weeks every summer and fall people scarcely slept any at night because of them. In 1849 an epidemic of cholera swept off thousands of active citizens. People lived in fear of other epidemics of this disease which the profession was powerless to check. Even now with modern developments of transportation the state is one of considerable distances, but let us remember the difficulties of travel in the early years of the last century. There were in 1850 but two short lines of railroad: The Sangamon and Morgan, from Meredosia to Springfield, the Chicago and Western, running to Elgin. Considering all these things, the wonder is that an organization was affected so early. Ohio, under the stimulus of Daniel Drake, had after twelve years of effort only organized two years before. Kentucky, under the stimulus of Samuel D. Gross, was not organized until one year later. The great stimulator of our organization we may imagine was Nathan Smith Davis, who had only been located in Chicago a few months. He it was who while a country practitioner in New York had started the movement which resulted in the formation of the American Medical Association. Undoubtedly there was a move toward better professional organization when Davis reached the metropolis of this state in 1849. We can hardly understand why he did not attend the first two meetings. Possibly the time necessary for the journey, four or five days, and the deliberations, two days, was too burdensome. Neither did Dr. Davis attend the meeting at Peoria in 1851 and was not one of the delegates to the meeting of the American Medical Association elected at that meeting. Dr. Davis first attended a meeting of this society at Jacksonville in 1852, and was elected one of the delegates to the American Medical Association to be held in the city of New York. From this time forward for more than fifty years he rarely missed a meeting, and his devotion to duty had much to do with its success. Dr. Davis attended the meetings as a conscientious duty. It was not his habit to stand around on the outside while the meetings were in progress. He was always on the front row of seats,

attentively listening to the speakers. If the speaker promulgated the truth, Dr. Davis was apt to commend him. If he uttered foolishness, he was rebuked. If he mumbled through his paper in a voice that could not be heard, Dr. Davis was apt to scold him for wasting the time of the society.

In order that the subject may be studied intelligently, we have divided the time, 68 years, into eight periods, which will be first stated and later studied in detail. These are:

1. 1850 to 1861. Formative period. Embracing formation at Springfield, 1850. Meetings at Peoria, '51; Jacksonville, '52; Chicago, '53; Rockford, '54; Bloomington, '55; Vandalia, '56; Chicago, '57; Rockford, '58; Decatur, '59, and Paris, '60. A slow growth and small membership. Not all were college graduates.

2. 1861 to 1866. Civil War period. Two meetings abandoned because nearly all members were in military service getting the best training possible at that time for successful civil practice.

3. 1866 to 1877. Post war period. Gradual growth in influence and members. The first law establishing the State Board of Health and regulating practice of medicine, agitated for years and passed during the session of the 30th General Assembly, was altogether due to the State Society.

4. 1877 to 1890. State control period. Great stimulus due to state law and improved hygienic conditions.

5. 1890 to 1899. Germ theory period. General acceptance of the new conceptions of disease. Continued slow growth of society until 1899, when Journal was established.

6. 1899 to 1917. Journal period. Growth of society more rapid, especially after change in character of A. M. A. organization, admitting all legal practitioners.

7. 1917 to 1918. Present period. 1917—The United States engages in world war. Large numbers of members tender their services.

I find the following resolution in the volume of transactions for 1863. It is so appropriate at this time that it is reproduced here:

Meeting of the Illinois State Medical Society held May 6, 1863, at Jacksonville, Ill.

Dr. Hollister of Chicago offered the following resolution, which was unanimously adopted:

Resolved, That we tender to those of our members serving as medical officers in the Army and now absent in the field, assurances of our kind remembrance of their humane labors and personal sacrifices; that we congratulate them upon their being able to contribute services so valuable to a cause so *noble*, and that we join with them in earnest desires, and personal efforts if need be for the early restoration of *peace* and the integrity of the *entire* union.

THE TREATMENT OF MERCURIC CHLORIDE POISONING.*

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Too much has of late been published on this topic. My justification for adding to this excess is that the literature on this subject is not only excessive, but also confusing. So great a variety of treatments has of late been evolved that the practitioner, face to face with a case of mercurial poisoning, cannot help feeling at a loss as to what would actually be best to do. To simplify, to clarify the situation, if possible, is my purpose.

The truth of the aphorism of Hippocrates: "Experience is fallacious and judgment difficult," is nowhere better illustrated than in connection with this topic. Clinical reports of one, ten, or even a hundred cases of corrosive sublimate poisoning with no or few deaths furnish but slender evidence of the value of any treatment, for there are so many factors of uncertainty involved. Thus size of dose makes a difference, but not necessarily in the anticipated direction. A large dose that is promptly evacuated by emesis may give the patient a better chance for recovery than a smaller dose that is not so promptly or thoroughly thrown back. That is the reason it is impossible to establish a surely fatal dose for this poison in the dog. Even the morphinized dog vomits so frequently as to make an extensive series of experiments upon this animal impracticable. What was in the stomach of the patient before the poison was taken is of greater importance even than the size of the dose; for mercury is so reactive a body that it will combine with many materials that might be present in the stomach; and, if the combination is promptly vomited, serious results might not occur. This, as well as variations in details and

*Read at sixty-eighth annual meeting of Illinois State Medical Society, March 28, 1918.

combination of treatment and in the time when the treatment was commenced, all contribute to make it impossible to say with scientific certainty that the patient recovered because of, rather than in spite of, a certain remedy. This is why a comparatively limited number of carefully controlled animal experiments is of greater value in arriving at tentative conclusions than a much larger volume of clinical experience.

There are two fundamental indications in the treatment of poisoning: One, to remove the poison; and two, to remove the effects. That we can do neither of these two things in mercuric chloride poisoning as completely or as thoroughly as we may desire becomes evident from the outset, when we contemplate the striking pathologic changes produced by the poison: The corroded stomach, the necrotic rugæ of the colon, or the degenerated kidney. There are, no doubt, certain patients who will die no matter what is done for them, just as there are cases that recover no matter what is done, but there must be some in whom treatment may turn the balance.

To remove the poison from the stomach or the system, in this condition, is a most discouraging task in view of the comparative insolubility and non-diffusibility of mercuric albuminate formed the moment mercuric chloride comes in contact with the protein material of the tissues. Were we to remove the stomach from an animal shortly after the administration of the poison, open the viscus and hold it under a stream of water, the running water would make very little impression upon the tough coagulum that lines the gastric wall. What chance have we then of removing it by stomach washing? Of course, the stomach should be washed out at once, so as to remove all other material in it that has combined with mercury; but the mercury that has precipitated itself into the gastric mucosa, and which is particularly dangerous, as it projects right into the redissolving blood stream, cannot be removed by emesis, stomach washing, or any other method known. It is a problem like that of unscrambling a scrambled egg. Even if we had the means of readily dissolving the coagulum, the employment of such a measure would be dangerous, as it would be liable to open up blood vessels and start a hemorrhage that might be fatal.

Giving albumen or other precipitant for mercury is quite useless, as I have shown by carefully controlled experiment[1], because by the time they are usually given all of the mercury has already been precipitated. If one could give a lot of egg albumen immediately after the poison had been swallowed, something might possibly be accomplished; but egg albumen is useless when given even five minutes later. Milk and serum albumen do not even lessen the toxicity of mercuric chloride, when they are given mixed with the poison. Wm. A. Hall[2] advanced the apparently ingenious idea of reversing Meyer's Reagent for alkaloids to effect the precipitation of mercury. Meyer's Reagent, which is a solution of potassio-mercuric iodide, is a well known general alkaloidal precipitant. Now when potassium iodide is mixed with a harmless alkaloid like quinin, it becomes a good precipitant for mercury. But, unfortunately, as I have found out by animal experiment, the precipitate is quite as poisonous as the uncombined mercury. Sodium carbonate, which likewise precipitates mercury, is also without antidotal value, for the precipitate kills animals quite as readily as the soluble poison. Methylene blue forms with mercuric chloride a voluminous colloidal precipitate; but, as I have discovered in as yet unpublished experiments, it fails to save animals from death by a lethal dose of the poison. None of these things are better, or as good, as egg albumen.

After the poison has been absorbed in the system, it can still not be washed out to any appreciable extent, as has lately been shown by W. D. Sansum[3] who, immediately after administering to dogs a fatal dose of mercuric chloride intravenously, produced an enormous diuresis by a prolonged and accurately timed intravenous injection of large amounts of fluid by means of a special pump devised for such purpose. Even though dogs passed, within an hour after the poisoning, from 2,000 to almost 3,000 mils of urine, the treated dogs did no better and even worse than those that received the same dose intravenously but without the attempt at washing out; and, as stated by Sansum, the treatment itself is not detrimental to normal dogs. Hence, it must be concluded that eliminative treatment is useless, once a fatal dose has been absorbed. The poison evidently exists in the system in colloidal, that is, in non-diffusible form, hence cannot be washed out to any important extent.

Is there nothing then, it may be asked, that is

of use in the treatment of this condition? I believe there is, and that one of our means of attack lies in the use of reducing bodies. Mercurous compounds are much less toxic than mercuric salts. The problem then is to reduce the mercuric albuminate present in the alimentary tract; and, if possible, elsewhere in the system. That the latter cannot be done, may be assumed *a priori*, as the system is full of oxidizing bodies that would render our reducing agents inert; and, inasmuch as none of these reducing bodies have a specific affinity for mercury, there is no reason to suppose that they could pick out the mercurial particles in the system to be oxidized by them in preference to suffering oxidation from contact with a multitude of other oxidizers. This assumption is borne out by some of Sansum's experiments, in which he injected intravenously a larges excess of sodium phosphite-acetate mixture, a good reducing agent, into a poisoned animal; but with negative results.

The reduction can, however, be accomplished while the poison is in the stomach, as is shown by the following observations: G. A. Linhart[7] announced, in 1913, that reduction of corrosive sublimate to calomel can be accomplished by sodium phosphite, instantaneously and completely, when salts of a feeble acid, such as sodium bicarbonate, acetate, or citrate are present at the same time. They act by lessening the liberation of H-ions, which, when they accumulate to a sufficient extent, slow and finally stop the reaction. He proposed that the combination be used as antidote in mercurial poisoning, and stated that he had received good results in animal experimentation. The next year, Thomas A. Carter[4, 5, 6] reported remarkable results with the use of this combination in poisoned human beings. Carefully controlled animal experimentation enables me to confirm these claims and to state that sodium phosphite (10 parts) combined with sodium acetate (6.6 parts) has a decided antidotal value in poisoned rabbits, which animals were chosen for my experiments, because of their inability to vomit, which enabled one to rely upon the retention of the dose.

Sodium phosphite alone is of no value. The reason for this is that phosphite alone reduces the mercury but slowly and incompletely. It is interesting to note, too, that a large excess of acetate seems to destroy the antidotal value of phosphite.

As sodium phosphite is not generally obtainable in drug stores, while sodium hypophosphite is. I experimented on the antidotal value of hypophosphite and found that, as in case of phosphite, hypophosphite alone is of no value as an antidote, that the combination of hypophosphite and acetate has antidotal action; and that good antidotal results were likewise obtained from a combination of sodium hypophosphite and hydrogen peroxide.

To determine which of the two is the better antidote I undertook, with the help of Mr. Hyatt[8], a rather extensive series of experiments with the result that the phosphite-acetate mixture seemed to be somewhat more effective; though the sodium hypophosphite-hydrogen peroxide mixture came in as a close second. When, therefore, sodium phosphite is not available, the following combination might be recommended:

Sodium hypophosphite	1,00 gm.
Solution hydrogen peroxide	2,50 ml.
Water	10,00 ml.

If the amount of the poison is known, ten times as much of the phosphite or hypophosphite should be given, as poison was taken. This should be followed by lavage with a dilute solution of the antidote. After this, owing to the fact that mercury is still in the stomach, and eliminated into it, a dose like the one suggested above, might be given every four to eight hours for several days.

Other reducing bodies I have tried as antidotes are stannous chloride and sodium sulphite in various combinations; but with negative results. These agents are evidently too unstable and too generally reactive. Calcium sulphide, suggested as antidote, in 1913, by Hayward and Allen[9], seemed to me too toxic to be seriously considered. Nevertheless, J. H. Wilms[10] and M. L. Holm[11] advocate it as an antidote. Wilms advises the intravenous injection of calcium sulphide 0.06 gm. to 30.0 ml. of distilled water per 0.06 gm. of bichloride taken. The solution must be freshly prepared by dissolving the calcium sulphide in boiling water, and filtering while hot. Wilms also suggests that the calcium sulphide may be taken by mouth, giving 0.12 to 0.30 gm. every hour, when the intravenous method is impracticable, or that both methods may be combined. Wilms' claim that human beings can be

given without serious results 0.5 gm. of calcium sulphide intravenously is certainly interesting. It is somewhat offset, however, by the experiments of Haskell and Courtney[13] who conclude that the benefits of calcium sulphide treatment are greatly overshadowed by its danger, owing to the toxicity of the antidote. In the present state of our knowledge, in view of the comparative harmlessness of phosphite and hypophosphite and their proved efficiency, it seems folly to advocate the use of so dangerous a remedy.

To remove the effects of the poison is even more difficult than to remove the poison. Still there is one effect that we can antagonize, and that is acidosis. That this occurs in the later stages of mercuric chloride poisoning has been shown conclusively by W. deB. MacNider[14] and others[15]. MacNider believes that the nephritis is not due to the elimination of mercury by the kidney, but to the acidosis.

In the terms of Martin Fischer's edema theory, this would be interpreted as meaning that the swelling and subsequent destruction of the cells of the kidney was due to the greater water affinity of the acid protein. To this I would add that, once the kidney function is crippled, the acidosis becomes aggravated; for it is one of the functions of the kidney to eliminate acid into the urine thus saving the system from acid intoxication. The acid intoxication is further increased by the acidosis of starvation produced by the profound changes in the alimentary tract, which make it generally impossible to administer nourishment for several days. Vicious circles are thus established, in which it might reasonably be believed that algali and carbohydrate, properly administered, would be of value. Experimental as well as clinical evidence are in favor of this.

In my work with rabbits, the only substances besides albumen and reducing agents that were found of value were the alkalies, sodium bicarbonate and sodium acetate (cf. Table 1). In view of the fact that these bodies do not precipitate mercury or do so but poorly, I was at first unable to understand the reason for the beneficial effect. It seems to me, now, that their action is due to antagonism of acidosis.

In this connection it may be also noted that we observed that oat- and carrot-fed rabbits were much more easily saved by means of antidotal treatment from death by a surely fatal dose of mercury, than were those that were fed on oats and water. I subsequently found that Ellinger[11] had noted a similar relation of feeding to the toxic action of cantharidin, and that Salant[16] and collaborators had obtained identical results from feeding in poisoning with tartrates. Ellinger believed that the comparative immunity of carrot fed animals to cantharidin, was due to the fact that these animals passed alkaline urine, while the oat-fed animals' urine was acid. When oat-fed animals were given sodium bicarbonate or sodium acetate in sufficient amounts to alkalinize the urine, they were as refractory to cantharidin as were carrot-fed rabbits. Salant, on the other hand, does not quite agree with this conclusion, as he finds that rabbits passing alkaline urine when fed on a diet of hay or cabbage or old carrots, were not nearly as resistant to tartrate as those fed on young carrots. He believes that the sugar may also play a role, for glucose has been found to exert a protective action in poisoning; but he concludes that we are as yet unable to completely explain the marked protective effect of carrot-feeding in tartrate nephritis.

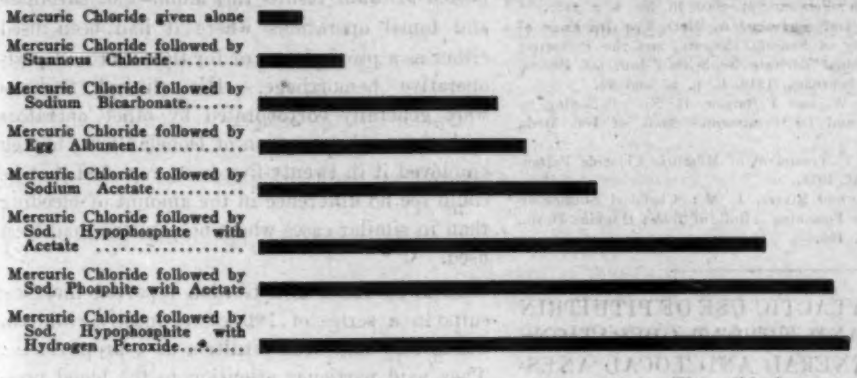
From the clinical side, alkaline treatment seems now well established. Perhaps the best known examples of it is that advocated by Lambert and Patterson[17]. H. B. Weiss[18] reports very good results from treatment very similar to that of Lambert and Patterson, with the exception that the frequent gastric and colonic lavage is omitted; and that, unless the case is obviously a mild one, alkali is used intravenously in the form of Fischer's solution (sod. carb. cryst. 10 gm., sod. chlor. 15 gm., to 1,000 ml. of water). 1,000 to 1,500 ml. being administered according to the condition of the heart. The endeavor is to make the patient void large quantities of urine and to keep the urine alkaline to a saturated solution of methyl red in alcohol.

Lambert and Patterson, as well as Weiss, have the patient drink large quantities, 6 to 8 glasses daily, of imperial drink, a cream of tartar lemonade. In view of the fact that tartrate is a kidney irritant, as shown by Salant and his co-workers, and that in my experiments on rabbits, potassium bitartrate proved worthless as an antidote, it seems that a lemonade containing sodium acetate might be substituted for it, to advantage.

Lewis and Rivers[19] used a similar treatment in their carefully investigated case, which recovered

TABLE 1.

Summary of Average Lethal Period, when Antidote was given immediately after the administration of the poison:


Mercuric Chloride given alone
Mercuric Chloride followed by Stannous Chloride.....
Mercuric Chloride followed by Sodium Bicarbonate.....
Mercuric Chloride followed by Egg Albumen.....
Mercuric Chloride followed by Sodium Acetate.....
Mercuric Chloride followed by Sod. Hypophosphite with Acetate .....
Mercuric Chloride followed by Sod. Phosphite with Acetate
Mercuric Chloride followed by Sod. Hypophosphite with Hydrogen Peroxide.....

even though completely anuric for 6 days. They did not use the cream of tartar lemonade; and they employed rectal drip injection of sodium bicarbonate saline solution instead of acetate. The chief difference between their treatment and that of the others, consisted in the daily intravenous injection of 500 ml. of a 10 per cent glucose solution, which they used for its protein sparing power, to lesson production and subsequent retention of nitrogenous waste, as well as because of its diuretic qualities. As long as carbohydrate cannot be retained by mouth, such injections seem decidedly indicated, for carbohydrate lessens the acidosis of starvation as well. Lewis and Rivers feel so confident of the value of this treatment that they consider death the only indication for discontinuance of treatment prior to the complete recovery of the patient.

We may conclude, therefore, that the value of reducing agents and of alkaline therapy is at present quite well established in the treatment of corrosive sublimate poisoning, and that the use of these should be added to lavage and albumen administration in the routine treatment of this intoxication.

DISCUSSION.

DR. GRAVES (Chicago): I would like to ask Dr. Fantus a couple of questions. At the end of the hundred days, did these rabbits die, or were they killed? Did you consider that these rabbits were sufficiently recovered at the end of a hundred days, and that there was no further danger of death at the end of that time? Does it make any difference how much water is used in the sodium phosphite?

DR. FANTUS: The animals that lived a hundred days uniformly were in good condition, had gained in weight, and some of these animals were examined post mortem. They did show scars in the stomach and did have a certain deficiency in the eliminating powers of the kidney, but they would have lived weeks and months afterwards, so that we can say they did recover.

I did not show you some of my results in this study. For instance, the question of the dilution of the poison was carefully investigated, and it was found it did not make any difference whether I administered the poison in one per cent. solution or in one-tenth per cent. solution.

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THE PROPHYLACTIC USE OF PITUITRIN IN NOSE AND THROAT OPERATIONS UNDER GENERAL AND LOCAL ANESTHESIA*

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The action of extracts of the infundibular portion of the hypophyseal gland on the circulation has been well established through the investigations of Schaefer and Oliver, Howell, Houghton and Merril, Beck and O'Malley, Klotz, Wiggers and others, and may be breifly summarized as follows:

1. The blood pressure is raised from five to thirty-five millimeters within a few minutes through direct stimulation of the muscle coats of the arterioles.

2. This increase in blood pressure is prompt and the fall to normal, on the contrary, very gradual.

3. Due to the constriction of the arterioles the actual size of the various organs of the body is diminished with the rise in blood pressure. The kidneys are the only exception to this rule, as they become enlarged upon receiving the pituitary extract and the output of urine is increased.

4. The heart, according to the majority of investigators, is slowed down, probably due to direct depression of the heart muscle and there is a diminution in the amplitude of the heart's excursions as demonstrated by Wiggers. Also there is a peculiar grouping of the heart-beats in periods of two or more. All of these manifestations are more marked just after the crest in the blood-pressure curve has been passed.

Based upon these facts the employment of pituitrin in connection with nasopharyngeal surgery was first given an impetus by Cetelli, who reported brilliant results in a number of turbinate and tonsil operations where it had been used either as a prophylactic or for the control of post-operative hemorrhage. His clinical findings were generally corroborated by other operators with the single exception of Donelan who, having employed it in twenty-five cases, reported that he could see no difference in the amount of bleeding than in similar cases where no pituitrin had been used.

In 1915 Kahn and Gordon reported their results in a series of 100 cases, mostly children, where they had used pituitrin as a prophylactic. They paid particuar attention to the blood pressure and coagulation time of the blood taken before and after the administration of the agent. They found that the systolic pressure had been increased in 55.31 per cent of the cases, reduced in 36 and unchanged in 8.5 per cent, and that the coagulation time had been reduced in nearly every instance.

A short itme ago I took occasion to report the results in a series of 100 cases of my own where pituitrin had been given as a prophylactic and for the control of post-operative hemorrhage. The results, which were considered solely from the clinical point of view, were very gratifying. Briefly, they showed that in 35 tonsillectomies done under local anesthesia, there was only one severe primary hemorrhage, four moderate and 29 slight. Five cases had a post-operative bleeding. In the 53 cases done under general anesthesia there was one severe primary hemorrhage, 16 moderate and 33 slight. There were no secondary or post-operative hemorrhages in this group.

My present report concerns 48 cases where pituitrin was given solely as a prophylactic against hemorrhage and comprises a study not only of the amount of the bleeding, but also of the effect on the blood pressure and coagulation time. The procedure was as follows: Blood pressure and coagulation were taken and followed immediately by a hypodermic of pituitrin, 1 cc. to adults and 0.5 to 1 cc. to children. After a lapse of fifteen minutes the blood pressure and coagulation were again taken and the patient sent to the operating room. As a majority of the cases were operated on in the afternoon, I had the

*Read at the Annual Session of the American Association of Anesthetists, at Chicago, June 11, 1918.

blood pressure taken again on the following morning before the cases were dismissed from the hospital.

The striking features of these experiments showing the action of the pituitrin were the uniform and prompt rise in blood pressure, the consistent lowering of the coagulation time and the absence of post-operative hemorrhage. These we shall consider seriatim.

Blood Pressure—All of the cases, with but one exception, showed a rise in blood pressure which was manifest fifteen minutes after the injection. This increase was maintained in 60 per cent of the cases for as long as 18 hours. At the end of that time 18 per cent of the remainder had reached the same level as below that level. This demonstrates that the action of pituitrin is far from being short-lived, and corroborates the statement of Klotz, who asserted that the increase in blood pressure may be sustained for as long as 24 hours. More significant in relation to the anesthesia is the fact that post-operative depression was combated to a great extent through the sustained blood pressure. Pituitrin has been used in a number of surgical conditions for the treatment of shock. Being prolonged in action, therefore, it exerts a two-fold influence in these nose and throat operations when employed as a prophylactic, both of which are factors that make for a more prompt recovery.

Coagulation Time—Determining the coagulation time of the blood is a more or less variable procedure because of the variety of methods that may be employed and the difference in judgment as to the exact moment when the coagulation may be considered complete. To be absolutely correct and avoid mixing the blood with tissue juices as in skin punctures, one would have to take the blood directly from a vein. In the present series, this was not feasible, and we had to resort to the old-fashioned ear-puncture, inaccurate though it may be, for the determination of the absolute coagulation point. However, the method by which this is determined is really immaterial for comparative purposes as long as the same method is employed in each case on both occasions, the punctures made in the same manner, a free flow of blood established without massaging the tissues and drops of equal size examined. These precautions were observed and the results showed definitely a decrease in coagulation time of from ½ to 5 minutes. The slowest coagulating blood (case No. 9), which took nine minutes, was reduced to four minutes by the pituitrin. There was only one case in which the coagulation was unaffected (case No. 18), although this case showed an average rise in blood pressure with a return to normal within eighteen hours.

Primary Hemorrhage—The amount of blood lost at the time of operation was none or ation was none or slight in 74 per cent and modslight in 74 per cent and moderate in 26 per cent of all cases. In relation to the anesthesia, of fifteen cases done under ether, ten were accompanied by slight and five by moderate bleeding, of which one was controlled by ligature and the other four by pressure. Of thirty-three cases done under local anesthesia, twenty-five showed a slight and eight a moderate bleeding, all of which were controlled by direct pressure.

Post-Operative Hemorrhage—There was only one case where post-operative bleeding was noted, occurring eight hours after a moderate primary bleeding in a young woman of eighteen, whose tonsils were removed under local anesthesia. This patient, by the way, showed a rise in blood pressure under the influence of pituitrin from 119 S. 87 D. to 130 S. 98 D., lasting until the following morning, when the readings were 127 S. 90 D. Her coagulation time has been reduced from four to three minutes. Aside from this case there was only one other that had a clot form in the tonsillar fossa, the remainder being entirely free from blood.

Considering the series as a whole, thirteen of the forty-eight cases showed a moderate primary hemorrhage and thirty-five only a slight bleeding. I employ the latter term as referring to a bleeding that ceases promptly after the wound has been made and requires no topical application of any sort. Of the thirteen moderate hemorrhages, eight were venous and easily controlled by direct sponge pressure. The other five were distinctly arterial, the spurters being either clamped or

No.	Name	Age	Operation	BLOOD PRESSURE Before Injection	15 Min. After Injection	18 Hours Later	COAGULATION TIME Before Injection	15 Min. After Injection
1	T. S.	24	Tonsil	135 S. 100 D.	152 S. 118 D.	130 S. 90 D.	5'	2'
2	D. S.	22	Septum	134 S. 96 D.	142 S. 102 D.	115 S. 85 D.	4' 15"	3'
3	D. F.	26	Tonsils	120 S. 90 D.	130 S. 98 D.	125 S. 94 D.	5' 50"	3' 10"
4	L. B.	21	Tonsils	115 S. 87 D.	120 S. 92 D.	120 S. 94 D.	3'	1'
5	A. H.	20	Tonsils	125 S. 96 D.	139 S. 98 D.	130 S. 95 D.	9'	4'
6	F. S.	28	Septum and Mid. Turb.	120 S. 85 D.	130 S. 92 D.	120 S. 90 D.	5'	3' 30"
7	L. S.	4	Tonsils and Adenoids	85 S.	98 S.	90 S.	2'	1' 15"
8	A. L.	30	Antrum	135 S. 100 D.	142 S. 110 D.	138 S. 105 D.	4' 30"	1' 30"
9	M. B.	11	Tonsils and Adenoids	103 S. 72 D.	110 S. 90 D.	105 S. 80 D.	3'	2' 35"
10	F. M.	29	Tonsils	115 S. 87 D.	128 S. 95 D.	120 S. 90 D.	6' 30"	2' 30"
11	R. S.	21	Septum	100 S. 75 D.	125 S. 90 D.	118 S. 82 D.	5' 15"	3'
12	M. S.	35	Tonsils	110 S. 82 D.	115 S. 90 D.	112 S. 83 D.	4' 35"	1' 30"
13	C. T.	25	Tonsils	115 S. 88 D.	120 S. 90 D.	115 S. 88 D.	3'	1'
14	E. W.	17	Tonsils	122 S. 88 D.	130 S. 96 D.	117 S. 86 D.	4'	2' 30"
15	A. W.	10	Tonsils and Adenoids	100 S. 80 D.	108 S. 84 D.	102 S. 80 D.	2' 30"	1' 10"
16	D. B.	22	Septum	132 S. 100 D.	138 S. 105 D.	130 S. 100 D.	3' 30"	1' 15"
17	H. L.	28	Tonsils	130 S. 95 D.	140 S. 100 D.	132 S. 97 D.	6'	2' 15"
18	R. Z.	17	Tonsils	100 S. 88 D.	108 S. 93 D.	100 S. 88 D.	3'	3'
19	I. C.	29	Septum	115 S. 90 D.	123 S. 92 D.	120 S. 90 D.	3'	2' 15"
20	M. M.	19	Tonsils	120 S. 90 D.	122 S. 94 D.	104 S. 82 D.	6' 30"	2'
21	J. B.	19	Tonsils	115 S. 85 D.	120 S. 87 D.	120 S. 88 D.	5'	1' 30"
22	M. L.	38	Tonsils	122 S. 90 D.	138 S. 97 D.	122 S. 92 D.	2' 30"	1'
23	M. B.	23	Tonsils	110 S. 82 D.	116 S. 88 D.	105 S. 80 D.	4'	2' 30"
24	G. M.	34	Tonsils	130 S. 92 D.	142 S. 100 D.	135 S. 95 D.	5'	3'
25	L. R.	24	Tonsils	120 S. 90 D.	126 S. 92 D.	118 S. 87 D.	4'	1' 15"
26	O. G.	20	Tonsils	100 S. 75 D.	115 S. 80 D.	100 S. 75 D.	6'	1' 45"
27	A. O.	27	Septum	118 S. 93 D.	130 S. 95 D.	120 S. 90 D.	3'	1'
28	D. M.	16	Tonsils	117 S. 82 D.	120 S. 85 D.	117 S. 80 D.	2'	1'
29	J. G.	15	Tonsils	117 S. 88 D.	123 S. 90 D.	120 S. 90 D.	4'	1' 25"
30	E. B.	15	Tonsils	108 S. 82 D.	110 S. 80 D.	112 S. 80 D.	2'	1' 30"
31	A. B.	38	Tonsils	132 S. 95 D.	140 S. 98 D.	130 S. 90 D.	3'	2'
32	A. F.	17	Tonsils	122 S. 88 D.	130 S. 90 D.	120 S. 90 D.	4' 20"	3'
33	C. C.	27	Septum	120 S. 88 S.	130 S. 94 D.	124 S. 90 D.	2'	1' 30"
34	R. S.	30	Tonsils	142 S. 102 D.	135 S. 98 D.	135 S. 97 D.	2' 15"	1' 30"
35	E. E.	33	Septum	124 S. 90 D.	128 S. 96 D.	124 S. 90 D.	2' 20"	1' 50"
36	M. M.	43	Tonsils	140 S. 100 D.	148 S. 100 D.	Not Taken	3' 50"	2'
37	H. L.	14	Tonsils	116 S. 80 D.	122 S. 85 D.	118 S. 82 D.	4'	2' 30"
38	A. P.	20	Tonsils	125 S. 92 D.	138 S. 98 D.	138 S. 92 D.	3'	1' 25"
39	S. G.	24	Tonsils	133 S. 94 D.	147 S. 99 D.	140 S. 90 D.	4'	1' 35"
40	G. O.	9	Tonsils	100 S.	116 S.	99 S.	4' 30"	2' 30"
41	M. S.	19	Tonsils	126 S. 84 D.	140 S. 94 D.	130 S. 86 D.	2'	1' 40"
42	F. B.	33	Tonsils	122 S. 90 D.	135 S. 95 D.	124 S. 92 D.	3'	1' 50"
43	G. B.	18	Tonsils	119 S. 87 D.	130 S. 98 D.	127 S. 90 D.	4'	3'
44	J. D.	26	Tonsils	120 S.	130 S.	123 S.	6'	2' 30"
45	R. G.	21	Tonsils	120 S. 90 D.	135 S. 98 D.	128 S. 92 D.	4'	1' 30"
46	L. B.	32	Tonsils	132 S. 94 D.	145 S. 99 D.	140 S. 95 D.	3'	1' 25"
47	M. A.	23	Tonsils	122 S. 90 D.	140 S. 98 D.	130 S. 92 D.	2'	1' 30"
48	H. P.	20	Tonsils	114 S. 80 D.	125 S. 84 D.	123 S. 86 D.		Not taken

Primary Bleeding	Secondary Bleeding	Anesthesia	Remarks	No.
Venous requiring pressure	None	Cocaine Quinine and Urea		1
None	None	Cocaine		2
Slight	None	Ether	Secondary operation	3
Slight	None	Cocaine Quinine and Urea	Secondary operation	4
Moderate requiring pressure	None	Cocaine Quinine and Urea		5
None	None	Cocaine	Patient has T. B.	6
Slight	None	Ether		7
None	None	Cocaine	Secondary operation	8
Slight	None	Ether		9
Slight	None	Cocaine Quinine and Urea		10
None	None	Cocaine		11
Slight	None	Cocaine Quinine and Urea		12
Slight	None	Cocaine Quinine and Urea		13
Moderate	None	Ether	Took the anesthetic poorly	14
Slight	None	Ether		15
None	None	Cocaine		16
Profuse venous: required pressure	None	Cocaine Quinine and Urea	Gagged violently; operation lengthy	17
Slight	None	Cocaine Quinine and Urea		18
Slight	None	Cocaine		19
Slight	None	Cocaine Quinine and Urea		20
Slight	None	Ether		21
Slight	None	Cocaine Quinine and Urea		22
Slight	None	Cocaine Quinine and Urea		23
Slight	None	Cocaine Quinine and Urea		24
One spurter clamped	None	Cocaine Quinine and Urea		25
Moderate	None	Cocaine Quinine and Urea		26
None	None	Cocaine Ether		27
Slight	None	Cocaine		28
Slight	None	Quinine and Urea		29
Slight	None	Ether		30
Slight	None	Cocaine Quinine and Urea		31
Arterial: ligature applied	None	Ether		32
None	None	Cocaine		33
Slight	None	Cocaine Quinine and Urea		34
None	None	Cocaine		35
Arterial: controlled by pressure	None	Cocaine Aposthesine		36
Slight	None	Ether		37
Moderate	None	Ether		38
Slight	None	Cocaine Quinine and Urea		39
Slight	None	Ether		40
Slight	None	Cocaine Quinine and Urea		41
Slight	None	Ether		42
Moderate	Slight about 8 hours later	Cocaine Aposthesine		43
Moderate	None	Cocaine Quinine and Urea	Small clot a few hours later	44
Slight	None	Cocaine Aposthesine		45
Slight	None	Cocaine Quinine and Urea	Had ½ strength HMC before operation	46
Arterial: controlled by pressure	None	Ether		47
Moderate	None	Ether		48

compressed. (In one case a ligature was applied.)

The fact that there was only one post-operative hemorrhage (that being a very slight one) is evidence of the efficacy of the prophylactic which is further borne out by the persistence of the action of the pituitrin as shown by the continued elevation of blood pressure.

As to untoward manifestations directly attributable to the pituitrin, the only one noted was the occurence of uterine contractions in several of the female patients. Some of them complained of "cramps" a short time after the administration of the hypodermic, which lasted fifteen minutes to an hour, but were not severe enough to require any particular attention.

In closing, it must be pointed out that pituitrin is contra-indicated in cases of arteriosclerosis or high blood pressure from other causes.

I desire to express my appreciation to Dr. L. B. Phelps of the staff and Drs. Casserly and Adamo, internes, of the Frances Willard Hospital, for courtesies shown and assistance rendered in the assembling of this series.

25 E. Washington St.

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RELATION BETWEEN PUBLIC HEALTH, TUBERCULOSIS AND MEDICAL EDUCATION*

WALTER B. METCALF, M. D.
CHICAGO

Of all the diseases common to man, tuberculosis is the most widespread and the most deadly. Other diseases, at times, have caused more dismay, more panic and for short periods even wider destruction, but tuberculosis has remained the most constant and the most pestilential of all—the worst scourge of mankind.

What tuberculosis means to the world in deprivation, anguish, grief and degradation cannot be even imagined. Take one family which has been affected by the disease; study its course from beginning to end; contemplate the havoc wrought and even try to analyze the damage done, financially, physically, socially and mentally; but we cannot read the hearts of those who looked on while the disease was torturing and killing, inch by inch, a loved one. We cannot know the long hope nor fathom the deep despair alternate in the mind of the stricken member, neither can we measure the heroism or estimate the cost to those who stood at the post of duty, year in and year out.

Tuberculosis kills men and women in their prime. Its victims are mostly of the active working age. From the standpoint of the wage earner, they die during the period of their greatest usefulness.

Statistics show that out of every three persons who die between the ages of 20 and 30 years, one of them dies of tuberculosis. That out of every four persons who die between the ages of 30 and 40 years, one of them dies of tuberculosis. That out of every five persons who die between the ages of 40 and 50 years, one of them dies of tuberculosis. That out of every seven persons who die in the United States, one of them dies of tuberculosis. More than 10,000 humans died last year in the state of Illinois of tuberculosis. Many times that number were invalided home, not to mention those who are still struggling in the marts with their impaired efficiency.

To be more specific as to statistics, I will quote from the report of the joint committee making the Medico-Actuarial Mortality Investigation which was issued in 1913. These statistics appeal to me as being more accurate than our state or national statistics because they formed the basis upon which large sums of money were paid. A diagnosis of tuberculosis was not placed in the physician's report, if there was any question or uncertainty about it being the cause of death. The family, not the insurance company, were given the benefit of the doubt.

One of the objects of this investigation was to determine the effect of different diseases upon mortality. It covered the experience of fifty-three old line life insurance companies from 1885 to 1900 inclusive, and embraced a study of the effect of ninety-one different diseases upon mortality. This report gives the result of their investigation. I will quote from the table under the

*Read before the Sixty-eighth Annual Meeting of the Illinois State Medical Society at Springfield, May 22, 1918.

caption, "Death by Causes Among Standard Lives." As you all know, this term "Standard Lives" means that before those men and women were accepted by the insurance company they were examined by competent physicans and declared to be free from disease. Their family history was favorable, they were known to be of good moral character and were considered physically and mentally fit to finance this insurance. In other words, they represented the selected ones and were not the average, and we have a right to assume that they were even better, from a physical standpoint, than the average in the community from which they were selected.

In the table above referred to the committee listed the ninety-one diseases, giving their effect upon mortality by percentages.

Tuberculosis was first in this list. Taking ages of entry 15 to 29 years, the combined death rate from tuberculosis, including men and women, was 26.9 per cent., or nearly 27 per cent. of the total deaths. In this connection, it is of interest to note that the above number of deaths from tuberculosis were admitted, not to mention those cases that unquestionably died of tuberculosis but not admitted, or that died of pneumonia, a cardiac lesion, or some other malady appeared as a complication and was given as the cause of death.

Typhoid fever was second. Accidental death was third. Pneumonia the fourth. And these three combined exceeded the death rate from tuberculosis by only 2 per cent.

Thus we see a constant procession of human beings wending their way to the silent city, victims of tuberculosis—a preventable and curable disease.

Up to very recently, in the eyes of monarchs and in the marts, human beings have been the cheapest of commodities. Their interests, their welfare and especially their health has received low-rate consideration. Today we are on the threshold of a new life; the value of the human is being recognized on every hand. We have no better example of progressive social evolution than is manifested in this vital shifting of position of the standard of national greatness which today can be summarized in the slogan—*man power*. Today nations are measured by their man power.

Today, as never before, commercial interests are considering man power, selfish as those interests are, yet with it all there is coming a benefit to the humans. For now in many places the wage earner is examined before he is given employment, examined regularly thereafter, provided in the work shop and at the home with the necessaries for his physical upkeep, thus aiding in his efficiency, and they have found that it pays in dollars and cents. This movement is of great value to us in meeting the tuberculous problem, but commercializing human health is not enough.

Then there is another factor at work for the same ends—the government, at last, has caught the idea and is trying to help solve the problem.

It is a recognized principle in all civilized communities that it is the function of the government to safeguard its subjects in their life and well being. This responsibility is equally binding, as it affects the human well and the human sick. The well ones are governed by laws affecting their conduct and relation with each other. They are warned and often restrained from the dangers of infection. In a few instances, the sick are provided for by the state in a generous way, but this plication, and was given as the cause of death.

The insane have been cared for by the state for many years. More recently a fuller appreciation of the needs for the epileptics has been met, but the government has been slow to appreciate the tuberculous problem. Money invested in the care of the insane will bring little or no return. Money invested in the epileptics will bring little or no return. Money invested in the tuberculous citizen will bring a large return, if invested early, and the value of the investment—the returns—will be in ratio with its early use. For prevention it will yield the greatest return. If spent upon the incipient cases the return will still yield compound interest, but, alas, up to the present most of the money has been invested in caring for the terminal cases and spent in the potter's field.

We have been meeting the tuberculous problem much in the same way that we have been meeting the liquor problem, namely, spending our money for the care of the drunkard and his dependents, instead of for prevention.

Prevention is the order of today. In truth, it may be said that the signal success of the present age in its fight against race devastating influences is to be attributed almost entirely to the recognition of the importance of prevention.

Never in the history of the world has the government asked so much, or demanded so much of humanity. And, if humanity now being put in the balance is found wanting, who is to blame?

We hear talk about state health insurance. Think, will you, of a state government insuring its citizens against its own product of neglect.

Tuberculosis in the animal industries receives more consideration from our state and national government to day than is being given to fight this disease among humans.

We are pleased to note that the government is trying to make some provision for the tuberculous cases sent home from the army. It is estimated that 600 to 700 have been returned to Illinois, up to this time, and we have not started to get the returns from the active front; no one can estimate even what they will be, but it is certain that the percentage will be a great increase over our normal percentage.

Here we have briefly presented the tuberculous problem and the responsibility of the state. If this problem is ever to be solved, and the state made to realize its responsibility, the proper and only compelling force lies in the medical profession, organized and individually, and I place this responsibility squarely upon the shoulders of the medical profession—*the health conscience of humanity*. Up to the present time the medical profession has failed, and the best evidence of this failure is the fact that more than 10,000 humans died in Illinois last year, that nearly 27 per cent. of the total death rate among standard lives in these United States, ages 15 to 29, was due to this preventable and curable disease.

Dare we hope for a better day, for better conditions? No; not until we strike at the root of the cause for this failure on the part of the medical profession. In my opinion, this failure on the part of the medical profession is due to faulty medical education. *The greatest crime committed today against the human race, the dead, the living and the unborn, is this neglect which I place at the door of our medical colleges.*

Tuberculosis, as such, is not taught in our medical colleges today. Instead, it is referred to as a part of, or secondary to some other subject. The student mind must be focused upon *this, the greatest problem, outside of the war, confronting us, for the preservation of the human race.* The medical student must be made to know the importance of tuberculosis, from a physical, financial, social and mental standpoint; taught that it is a preventable disease, and that the success in treating the disease is in ratio with its early diagnosis. He must learn the facts in such a way that he will be able to compel recognition of the importance of tuberculosis.

A review of the catalogues issued by the class A medical colleges for 1917 evidences that one college dignifies the subject by having a clinical professor of tuberculosis, and five or six other colleges give the subject honorable mention.

From the circular of information—the catalogue—of one of the class A medical colleges of Illinois, I note that they have a Department of Laryngology and Otology, with the following officers of instruction:

3 Professors.
7 Assistant Professors.
6 Instructors.
3 Assistants.

A total of 1.2 majors is required in this department, and it is recommended that more be taken if time permits.

In this same medical college, under the caption, "Medical Tuberculosis," they have one assistant professor in Medicine and two assistants, giving a clinical and conference course with a total credit of 0.6 major. This course is optional. This is the only medical college in the state giving any credits, optional or required, for instruction on tuberculosis. In our state institution I am advised by the students that last year they received three lectures on tuberculosis under medicine.

Think, will you, of a medical college requiring 1.3 majors in laryngology and otology and 0.6 major credit in tuberculosis, and this course optional.

Now let us look at the list of ninety-one diseases as they affected the mortality of the "Standard Lives," as represented in the Medico-Actuarial Investigation, and we see that tuberculosis heads the list with 26.9 per cent., or twenty-seven out of every 100 deaths was due to tuberculosis. Again, we look at this list of ninety-one diseases in their order as they affected mortality, and we see typhoid fever is second, accidents third, pneumonia fourth, and so on down the list we go, and we find not one death was due

to disease of the larynx; not one death was due to disease of the ear.

Over one-fourth of the total death rate among these "Standard Lives" was due to tuberculosis, and not one death was due to a diseased larynx or ear. In other words, from the standpoint of statistics, tuberculosis was first. Total death arte, 26.9 per cent; throat and ear diseases, no deaths. Tuberculosis and ninety other diseases more hazardous to life than diseases of the larynx and ear combined.

From the standpoint of medical education, laryngology and otology credits 1.2 majors, tuberculosis 0.6 major, and this course is optional. Two times as much credit given the student for laryngology and otology as in tuberculosis; *one required, the other only optional*—and this the only medical college in the state of Illinois giving any credits for work done in tuberculosis.

It is my opinion that the greatest need should be the governing factor in determining the time spent, and the prominence given various subjects in our medical education. Where the greatest need—there should be established the largest department. The largest department in a medical college should be the Department of Tuberculosis.

FORCING ECONOMY ON US

One by one the economies which the Government asked the people of the United States to practice, away back in the beginning of the War Savings Campaign, are being forced upon them because of the pressing needs of the war.

Fuel and materials are being denied non-essential industries. Limits are being placed upon the amounts of coal, sugar or flour individuals may purchase. Wool supplies are being taken over for army purposes, and civilians forced to use shoddy. The latest and most drastic action is the government order that automobiles may not be used on Sundays. In all Europe, belligerent or neutral, there is not a pleasure automobile in use, and it is possible that, before this war is won, the United States may come to the same pass.

The principal result of the scarcity which the war has caused has been an enormous advance in prices of all articles which remain for general commerce. The seller is now king. He is able to name his own prices, regardless of original cost of what he has to sell. The result has been profiteering on a large scale. It is the individual consumer who suffers, not the army and navy, for the Government, very largely, has been able to fix prices on commodities which it buys.

But still the individual has not learned the lesson. He follows the prices up and up, and strives to find for his own use all the luxuries to which he was accustomed. The mechanic, through great increases in wages, has been able to do so, but the salaried man and the man who lives on a fixed income obtained through investments has found the task increasingly difficult.

The time now has come when economy not only is compulsory in some lines, but should become universal. War times should and must bring a revision of ideas of what are necessities. Of course the people must be well and wholesomely fed, comfortably housed and warmly clad, if they are to retain their morale and physical stamina. But that is about all that is absolutely necessary, especially when they realize that their sacrifice is to be but temporary and is to help bring victory that will make the world a better place for all mankind.

There is no necessity for us following the prices up and up until they become absolutely prohibitive. We can, all of us, do without. We should be glad to deny ourselves to hasten victory. By lessening the demand for all things which are not absolutely necessary to maintain life and health in war time we will force the producers into the lines in which demand remains—food and fuel—and thus increase the supply and lower the prices of absolute necessities.

The War Savings Campaign offers the best and surest way to force these economies. If we put our money, regularly and methodically, into these handy Government securities, we cannot be spending it for something which we might it possible to do without. We are not only lending the funds necessary to the winning of the war, but are taking away the competition with the Government for materials and supplies.

And, not only that, when we purchase War Savings Stamps we are laying aside money which will be due in a few years, after the war is over and normal prices have returned, which will enable us to enjoy, when enjoyment is legitimate, more of the good things of life than we have ever enjoyed before.

The season of the year is approaching when, normally, we make most of our unnecessary expenditures. It is the holiday season of good cheer, when we express our love for those dear to us with gifts, often frivolous, but appropriate to the season.

This year the appropriate gift will be the War Savings Stamps. It will be a sign of our love for our country, our relatives and our friends.

Let us make this Christmas a patriotic Christmas, and begin to plan for it now.

IS THIS A HOSS ON SOMEONE?

Dr. A. C. S. left the first of the week for Chicago where he will spend two weeks taking special courses in eye, ear, nose and throat work. A part of this work will be under Dr. J. R. Hossman, a specialist, whose work is the fitting of glasses.—*The Aledo Record.*

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SEPTEMBER, 1918

Editorial

DIPHTHERIA VACCINATION

We are now being advised by the Health Departments of New York, Chicago and probably other large cities to vaccinate children against diphtheria.

This method of prevention of diphtheria is not entirely new; neither is it old enough to place implicit confidence in it. We presume that war conditions have prevented extensive work in this line by the research laboratories. The work done by the New York and Chicago Health Departments would indicate a very sucessful immunization against this infection which is so fatal to children.

So many new things supposedly sure of results and which do not stand the test of time are handed to the medical profession that entire confidence should not be placed until positively proven. So far as we have noted there have been no serious results in the use of the vaccine. A slight febrile reaction results in some cases. Time enough has not elapsed to tell just how long the immunity lasts. It is predicted that it will last at least several years.

More definite and complete data should be given the profession. We should know how many children have thus far been vaccinated; if any, the number of serious results from the vaccinated. Particularly we should know definitely and positively how many children have contracted diphtheria after being vaccinated, and the period of time elapsing between the date of vaccination and the date of diphtheria infection.

We hope this method proves to be as successful as its supporters think, and we hope physicians interest themselves in this method of immunization. It is in no way a curative agent as antitoxin is, and to be effective it must be used at least a month before exposure to infection. If this immunization is what is now claimed for it, school life of children may be made free from one of its menaces, and the anxiety of many parents will be relieved.

TO PHYSICIANS OF AMERICA

Surgeon General Gorgas has called for 1,000 graduate nurses a week—8,000 by October 1st.

Twenty-five thousand graduate nurses must be in war service by January 1st—in the Army Nurse Corps, in the Navy Nurse Corps, in the U. S. Public Health Service in Red Cross war nursing.

This involves withdrawal of many nurses from civilian practice and necessitates strict economy in the use of all who remain in the communities.

You can help get these nurses for our sick and wounded men by:

Bringing this need to the attention of nurses.

Relieving nurses where possible wholly or in part from office duty.

Seeing to it that nurses are employed only in cases requiring skilled attendance.

Insisting that nurses be released as soon as need for their professional service is ended.

Seeing that your patients use hospitals instead of monopolizing the entire time of a single nurse.

Encouraging people to employ public health nurses.

Instructing women in the care of the sick.

Inducing high school and college graduates to enter the Army School of Nursing or some other recognized training school for nurses.

Encouraging nurses to go to the front involves real personal sacrifice and added work on the part of the physicians whose duty it is to maintain the health of our civilian second line defense.

But the men who are fighting for their country in France need the nurses.

Department of Nursing,
AMERICAN RED CROSS,
Washington, D. C.

A SPECIAL APPEAL

To the Presidents, Secretaries and Members of the County Societies of the 9th Councillor District:

Esteemed Colleagues: While I realize that under existing conditions the doctors who remain at home are often pressed for time, and many find it difficult to attend society meetings, I must still remind them that at no time in the history of medicine in Illinois has there been greater need for this sacrifice..

The country is in the midst of the greatest war ever known, and our patriotic brothers in service have made greater sacrifices than any of those at home can ever make, and our duty to them, to ourselves, and to our clientele, demands that we take advantage of every opportunity to prepare ourselves fully for the service we can render.

It is not enough for us to be satisfied with caring for those who call upon us for aid; there are many avenues in which our helpful advice can be made acceptable; many forms of activity in which doctors are especially useful; and should we fail to offer ourselves cheerfully for such service we are not living up to the traditions of the medical profession.

The buying of bonds and thrift stamps is a poor measure of our patriotism, and of our loyalty and devotion to our professional duties. This is rather an evidence of our "thrift." These are "investments," and as such are far better and safer than many of those made by doctors, who are notoriously "easy marks."

The most effective work of the doctors during this trying period is through organized medicine; through the medical societies; and I feel that now is the time when attendance at meetings is of the highest importance. When affiliating with the organized profession is an imperative duty, and I would urge all members to attend as many metings as possible, and to try to have as many of those who are not affiliates get into the societies.

But little time is lost while attending meetings and the benefits far outweigh the loss. Dr. Doan has this well expressed in the *Macoupin County Bulletin* motto, which says: "There is no time lost in whetting your scythe."

Your Councillor is ready and willing to do all he can to aid in the work of the District, and solicits correspondence regarding the needs of the County Societies. I would be especially grateful for any information regarding enlistments in the Medical Reserve Corps.

Sincerely yours,
C. W. LILLIE,
Councillor 9th CouncillorDistrict.

VOLUNTEER MEDICAL SERVICE CORPS

STATEMENT BY DR. FRANKLIN MARTIN, MEMBER OF ADVISORY COMMISSION AND CHAIRMAN OF GENERAL MEDICAL BOARD, COUNCIL OF NATIONAL DEFENSE

FOREWORD

The Volunteer Medical Service Corps was authorized by the Council of National Defense on January 31, 1918. Under this authorization the membership of the corps consisted of all physicians who because of overage, physical disability, dependents and essential home needs were not eligible for service in the Medical Reserve Corps of the Army or Navy.

ENLARGED SCOPE OF THE ORGANIZATION

On August 5th the Council of National Defense authorized a change in the scope of the organization and an increase and amplification of its Central Governing Board. Membership in the Corps as now auhorized, makes eligible to the Corps every legally qualified physician, including women physicians, holding the degree of Doctor of Medicine from a legally chartered medical school, without reference to age or physical disability, provided he or she is not already commissioned in the Government Service. This or-

ganization has now the approval of the President as indicated in the following letter:

THE WHITE HOUSE

Washington, August 12, 1918.

My dear Mr. Martin: I have received your letter of August 5, laying before me the matured plan for the reorganized Volunteer Medical Service Corps, of which you ask my approval. This work was undertaken by you under the authority of the Council of National Defense; it has had great success in enrolling members of the medical profession throughout the country into a volunteer corps available to supply the needs of the Army, Navy and Public Health Service. In co-operation with the General Medical Board of the Council of National Defense, the strong governing board of the reorganized corps will be able to be of increasing service, and through it the finely trained medical profession of the United States is not only made ready for service in connection with the activities already mentioned, but the important work of the Provost Marshal General's office and the Red Cross will be aided and the problems of the health of the civilian communities of the United States assured consideration. I am very happy to give my approval to the plans which you have submitted, both because of the usefulness of the Volunteer Medical Service Corps and also because it gives me an opportunity to express to you, and through you to the medical profession, my deep appreciation of the splendid service which the whole profession has rendered to the nation with great enthusiasm from the beginning of the present emergency. The health of the Army and the Navy, the health of the country at large, is due to the co-operation which the public authorities have had from the medical profession; the spirit of sacrifice and service has been everwhere present and the record of the mobilization of the many forces of this great Republic will contain no case of readier response or better service than that which the physicians have rendered.

Cordially and faithfully yours,

(Signed) WOODROW WILSON.

Dr. Franklin Martin,
Advisory Commission,
Council of National Defense.

At a meeting of the Central Governing Board, held on Friday, August 2nd, it was moved by Dr. Sawyer, seconded by Dr. Martin, that the Central Governing Board shall consist of the present Central Governing Board (excepting Sherk, Bradford, and Brophy) and others as follows:

Surgeon General William C. Gorgas, U. S. A.
Surgeon General William C. Braisted, U. S. N.
Surgeon General Rupert Blue, U. S. P. H. S.
Provost Marshal General E. H. Crowder.
Dr. Franklin Martin, Chairman of Committee on Medicine and Sanitation, Council of National Defense.
Dr. Edward P. Davis, President, Volunteer Medical Service Corps.
Dr. John D. McLean, Vice-President.
Dr. Charles E. Sawyer, Secretary.
Admiral Cary T. Grayson, U. S. N.
Dr. F. F. Simpson.
Dr. Frank Billings.
Dr. H. D. Arnold.
Mr. W. Frank Persons—Red Cross.
Dr. Victor C. Vaughan.
Dr. William H. Welch.
Dr. Robert L. Dickinson, Chief of Staff's Office.
Colonel R. B. Miller, U. S. A., Chief of Personnel Division.
Surgeon R. C. Ramsdell, U. S. N., Chief of Personnel Division.
Colonel James S. Easby-Smith, Executive Officer.
Dr. Joseph Schereschewsky, Assistant Surgeon General (Personnel).
Dr. C. H. Mayo or W. J. Mayo.
Dr. William Duffield Robinson.
Dr. George David Stewart.
Dr. Duncan Eve, Sr.
Dr. Emma Wheat Gillmore.

GENERAL PLAN

The Volunteer Medical Service Corps is exactly what its name indicates. It is a gentleman's agreement on the part of the civilian doctors in the United States who have not yet been honored by commissions in the Army or Navy, and a representative board of governors consisting of officials of the Government associated with lay members of the profession, in which the civilian physician agrees to offer his services to the Government if required and asked to so do by the Governing Board.

It is a method of recording all physicians who are not yet in service and classifying them so that their services when required will be utilized in a manner to inflict as little hardship on the individual as possible. It is a method by which every physician not in uniform will be entitled to wear an insignia which will indicate his willingness to serve his Government.

As more than sixty per cent. of the physicians of the country will be utilized in caring for the industries at home and the health of the home people, this large percentage of necessity will be expected to maintain their home status and continue their ordinary professional work.

COUNCIL OF NATIONAL DEFENSE

MEDICAL SECTION
WASHINGTON

The Council of National Defense authorizes the following:

Many thousands of blanks for enrollment of the legally qualified men and women physicians of the country in the reorganized Volunteer Medical Service Corps are being mailed by the Chairman of the General Medical Board of the Council of National Defense. With the blank are enclosed a letter and a folder giving all details as to the organization.

The blank which applicants are asked to fill out reads:

APPLICATION FOR MEMBERSHIP IN THE VOLUNTEER MEDICAL SERVICE CORPS AUTHORIZED BY COUNCIL OF NATIONAL DEFENSE

Approved by the President of the United States

(Spaces for date, full name, street, city and state addresses.)

1. Date of birth.
2. Place of birth.
3. If foreign born, when did you become a resident of the United States?
4. When and where naturalized? How?
5. Are you single, married, widowed, or divorced? Nationality? Color? Height? Weight?
6. State high school, academy, college, or university you have attended, with dates of attendance, graduation, and degree received.
7. Give all literary or scientific degrees you have received and names of institutions granting them, with dates.
8. With what languages or branches of science are you familiar?
9. When and where graduated in medicine?
10. When and where licensed to practice medicine?
11. Name principal medical societies of which you are a member. (Do not abbreviate.)
12. What specialty of medicine do you practice?
13. Proportion of time devoted to specialty?
13. Proportion of time devoted to specialty?
14. Clinical experience in specialty? Institution? No. of years?
15. State all past hospital services. Hospital. Capacity. Date.
16. Present hospital connections. Hospital. Department. Capacity.
17. School and teaching positions occupied in the past. School. Capacity. Date.
18. School and teaching positions now occupied. School. Department. Capacity.
19. State all past experience in industrial or railroad medicine and surgery. Name and address of plant. Type of service (whether medical, surgical, occupational diseases, accident work, contract practice for families of workmen, etc.) Duration of service.
20. State all present connections with industries or railroads. Name and address of plant. Type of Service (whether medical, surgical, occupational diseases, accident work, contract practice for families of workmen, etc.) Time devoted to each plant.
21. State military, naval or public health experience you have had.
22. Are you a Federal, State, County, or Municipal officer? (State exact designation of your office.)
23. Are you engaged in enterprises other than medicine? If so, what?
24. Have you followed any occupation, medical or otherwise, not already noted?
25. Have you previously been an applicant for entry into the United States Service? Service. When. Where. Result. (If rejected, state why.)
26. I have not applied for appointment in the Medical Reserve Corps of the Army, the Naval Reserve Force, or the Public Health Service owing to —(Check reason).
    a. Physical disability. (State disability in detail.)
    b. Over age (55). State age in years.)
    c. Essential institutional need. Name of institution. Position. Name and address of chief executive.
    d. Essential community need. Approximate population. Number of physicians now practicing in your community.
    e. Essential to Health Department. Name of department. Position. Name and address of chief of department.
    f. Essential to industries. Name of plant. Position. Name and address of chief executive.
    g. Essential to medical school. Name of medical school. Position. Name and address of dean.
    h. Essential to Local or Medical Advisory Boards. Name and address of Board. Position.
    i. Dependents. Number of dependents, including self but not employees. What proportion of your income or that of your dependents is derived from sources other than the practice of your profession? Do other persons contribute to the support of your dependents? Have you or your dependents other immediate relatives who could provide support for your dependents?
    j. Sex. (State your sex.)
    k. Religious conviction, not a citizen, or other reasons. (State reason.)
27. Are you available for any of the following services:
    a. Consultant. Medical Service. Surgical Service. Public Health Service. Special Service —What?
    b. Institutional. Laboratory. Administrative. Medical Service. Surgical Service. Special Service—What?
    c. Medical service for industries. Part time. Own community. Other communities. Kind of work.
    d. Local or Medical Advisory Boards.
    e. Reclamation of registrants rejected for physical unfitness.
    f. Services to needy families and dependents of enlisted men.
    g. Sanitation.
    h. Miscellaneous service.
28. Check the Governmental service in which you would prefer to serve, if selected.
    a. Medical Reserve Corps of the Army.
    b. Naval Reserve Force.
    c. Public Health Service.

NOTE: Whenever practicable, your preference will be given consideration. However, the exigencies of war may render it necessary to ask you to do service other than that indicated as your choice.

29. Personal references. (Name three, at least one physician.)

I hereby make application for membership in the Volunteer Medical Service Corps of the United States. I certify that, to the best of my knowledge and belief, the answers to the preceding questions are true and correct in every respect. I pledge myself to abide by the rules and regulations of the Corps; to apply for a commission in the Medical Reserve Corps of the Army, the Naval Reserve Force, or for appointment in the Public Health Service when called upon to do so by the Central Governing Board; and to comply with any request for service made by the Central Governing Board.

(Signature.) .....

(Present post-office address.) .....

An outline of the purpose and scope of the Volunteer Medical Service Corps, contained in the folder, is as follows:

Volunteer Medical Service Corps organization:

1. Provides means for obtaining quickly men and women for any service required.

2. Furnishes recommendations and necessary credentials to assure the best of medical service, both military and civil.

3. Determines beyond question the attitude of the individual toward the war.

OBJECT OF THE CORPS

1. Placing on record all medical men and women in the United States.

2. Aiding Army, Navy, and Public Health Service in supplying war medical needs.

3. Providing the best civilian medical service possible.

4. Giving recognition to all who record themselves in Army, Navy, Public Health activities, or civilian service.

WORKING PLANS

All matters pertaining to the organization will be under the direction of a Central Governing Board, authorized by the Council of National Defense and approved by the President of the United States, and its affairs will be conducted from the general headquarters of the Volunteer Medical Service Corps at Washington, D. C., under the Council of National Defense.

OPERATING SYSTEM

1. Central Governing Board of 25.

2. Forty-nine state executive committees.

3. One representative in each county in every state.

NOTE: (a) All men to be appointed to state and county committees preferably over 55.

(b) Each state executive committee to consist of five in the smaller states and one additional member in each of the larger states in proportion to each 1,000 medical inhabitants (to be nominated by state committees, medical section, Council of National Defense, from among their own members).

(c) Each county of 50,00 population or under should have one representative. All counties having over 50,000 population should have one additional county representative for each 50,000 population or fraction thereof. All county representatives to be nominated by the state executive committee.

DUTIES

Central Governing Board—To receive and pass upon all appointments.

State Governing Boards—To receive facts from county representatives and make recommendations to Central Governing Board.

County Representatives—To submit facts to state committees according to advice from Central Governing Board or State Executive Committees.

Under the reorganization, every legally qualified physician, man or woman, holding the degree of Doctor of Medicine from a legally chartered medical school, who is not now attached to the government service, and without reference to age or physical disability, may apply for membership and be admitted if qualified; whereas, the original organization admitted only those who for various reasons were ineligible to membership in the Medical Reserve Corps. The organization will mobilize the medical profession in order to provide for the health needs of the military forces and the civil population, and the recording and classifying of doctors will afford means of obtaining quickly men and women for any service required.

To date about 40,000 of the 144,116 doctors in the United States—not including the more than 5,000 women doctors—either are in government service or have volunteered their services. Up to July 12 the Surgeon General had recommended to the Adjutant General 26,733 doctors for commissions in the Medical Reserve Corps. About 9,000 others who applied were rejected. With the 1,194 in the Medical Corps of the National Guard and 1,600 in the Navy, the total—38,527—constitutes 26.73 per cent. of the civilian doctors. Deducting those who declined their commissions or who have been discharged because of subsequent physical disability or other cause, the number actually commissioned in the Medical Reserve Corps stands (August 23) at 23,531 with several hundred recommended whose commissions are pending. Of the 23,531 there are 22,232 now on active duty.

The need of using wisely the service of the medical men, in view of the universal war activities, is indicated when it is known that in the five weeks ended

August 2, there were 2,700 medical officers commissioned in the Army, Navy, and Public Health Service—or at the rate of 540 per week. This rate at which enrollment is proceeding is the cumulative result of the operation of all the machinery which has been in process of setting up since the United States entered the world war. While the number commissioned in the five weeks mentioned may seem large, it is not much greater than the rate at which medical men have been receiving their commissions during the past year. There are now 28,674 medical officers commissioned in the three services—26,027 in the Army, 2,427 in the Navy, and 220 with the commission of Assistant Surgeon in the United States Public Health Service. Of the 2,700 commissioned in the five weeks ended August 2, there were 2,527 in the Army, 169 in the Navy, and 4 in the United States Public Health Service. Also, 40 doctors designated as Acting Assistant Surgeons have been taken on in the Public Health Service in the last two months, 21 for work in extra-cantonment zones, 14 for special venereal disease work, and 5 for marine hospitals. The 26,027 in the Army medical service comprise 933 in the Medical Corps, the Regular Army service; 23,531 in the Medical Reserve Corps; 1,194 in the Medical Corps of the National Guard, and 369 in the Medical Corps of the National Army.

It is estimated that at least 50,000 doctors will be necessary eventually for the Army. It can readily be seen that with the enrollment of these active men, their places in communities and institutions must be cared for and the work, therefore, throughout the country must be so systematized and coordinated that the civilian population may not suffer. An important aspect is the need for medical men in the products are being made.

The Volunteer Medical Service Corps, supervised by the Central Governing Board now named, will thoroughly care for these needs.

In connection with the mailing of membership blanks for the Volunteer Medical Service Corps to all legally qualified men and women doctors of the country, Dr. Franklin Martin, Chairman of the General Medical Board of the Council of National Defense, says:

"Great as has been the response to the appeal for doctors, it must be greater. It is imperative that every doctor not already in a government service fill out, sign and return the blank to the offices of the Central Governing Board, Council of National Defense, Washington, at once. We believe thousands will do this, as they are anxious to be enrolled as volunteers for the Medical Departments of the Army and Navy before registration under the new draft law goes into effect. The appeal for enrollment in the Volunteer Medical Service Corps, which President Wilson has formally approved, is an official governmental call to service. This will place the members of the medical profession of the United States on record as volunteers, available for classification and ready for service when the call comes."

EYE, EAR, NOSE AND THROAT

Those desiring to read papers during the coming session of the Eye, Ear, Nose and Throat Section, of the Illinois State Medical Society, at Peoria, Illinois, May 20, 21 and 22, 1919, are requested to communicate with the Secretary or Chairman of the Section, as early as possible, as the scientific program is now being arranged. It is especially desired to have as large a representation as possible on the program from throughout the entire state.

Dr. Wesley Hamilton Peck, Chairman,
31 North State Street, Chicago, Ill.
Dr. Frank Allport, Secretary,
7 West Madison Street, Chicago, Ill.

Public Health

INFANTILE PARALYSIS SITUATION IN ILLINOIS

During the four weeks ending August 28th, 50 cases of acute poliomyelitis were reported to the State Department of Public Health; seven of these have not been examined and seven were declared upon examination not to be true cases of Infantile Paralysis. During the four weeks there have been 13 deaths from the disease, with 29 released from quarantine and 29 still under quarantine. The total number of cases from January 1st to August 29th is 213 with 41 deaths. 31 of the cases reported were found upon examination not to be poliomyelitis.

The communities having the largest number of cases have been Kankakee County with 14 cases and 2 deaths; Cook County, outside of Chicago, with 12 cases and 1 death; Jo Daviess County with 11 cases and 2 deaths; De Kalb County with 9 cases and 6 deaths; Macoupin County with 6 cases and 2 deaths; McHenry County with 6 cases and 2 deaths. So far this year the disease has appeared in 43 of the 102 counties of the State.

TYPHOID FEVER IN ILLINOIS

During the past month typhoid fever has been reported from 18 communities in the State. The rather serious epidemic of the disease which has prevailed at Moline for several months now shows signs of abatement. There have been approximatly 145 cases in Moline since April, the epidemic being attributed to a pollution of the municipal water supply through raw water drawn from the Mississippi River.

In Jacksonville there have been 45 cases of typhoid fever and through investigations of the State Department of Public Health suspicion was thrown on a contaminated well situated in a local lumber yard. The outbreak at Wheaton has been traced to a contaminated milk supply.

NEW ILLINOIS STANDARD DEATH CERTIFICATE

A new standard death certificate for use throughout Illinois has been prepared by the Division of Vital Statistics of the State Department of Public Health and is now in press. Several important changes characterize this certificate and serve to eliminate statistical errors which necessarily have occurred in the use of the old forms. In many instances, particularly in those having large hospitals or other institutions, the mortuary records for the community are misleading in that they include the deaths from a large number of individuals who are not residents of that community. The new death certificate shows the actual residence of the deceased immediately after the name. The following questions are important additions in the new form and lead to a more accurate conclusion as to where the disease was contracted if not at the place of death. It raises the query as to whether a surgical operation preceded death and if so it asks for the date of operation. A statement must be made as to whether or not an autopsy was performed and finally what test or tests confirmed the diagnosis given.

These blanks will be ready for distribution in the near future.

RETURNED TUBERCULOUS SOLDIERS IN ILLINOIS

Up until August 28th, approximately 1200 soldiers have been returned to the various sections of Illinois from military cantonments on account of tuberculosis. Under the provisions of an agreement with the Central Division of the American Red Cross, the State Department of Publlic Health, and the Illinois Tuberculosis Association, the accurate diagnosis of all of these cases, together with recommendation for treatment is being carried out by the State Tuberculosis Association in conjunction with the State Department of Health. The American Red Cross through the Home Service Sections of Local Chapters assist in making financial provision for the home treatment and for the sanatorium care of these returned soldiers.

In the city of Chicago the diagnosis and treatment are worked out jointly by the Chicago Chapter of the American Red Cross, the Chicago Health Department, and the Chicago Municipal Tuberculosis Sanitarium.

So far tuberculous soliders have been returned for care and treatment to the following Illinois Counties: Adams 7; Alexander 6; Bond 2; Brown 1; Bureau 5; Calhoun 1; Carroll 5; Cass 6; Champaign 7; Christian 4; Clark 9; Clay 6; Clinton 4; Coles 7; Cook (outside of Chicago) 29; Crawford 4; Cumberland 2; De Kalb 4; De Witt 4; Du Page 3; Edgar 6; Edward 3; Effingham 5; Ford 1; Franklin 12; Fulton 6; Gallatin 3; Greene 1; Grundy 4; Hamilton 3; Hancock 3; Hardin 1; Henderson 2; Henry 3; Iroquois 2; Jackson 5; Jasper 6; Jefferson 8; Jersey 2; Johnson 3; Kane 16; Kankakee 6; Kendall 4; Knox 9; Lake 9; La Salle 8; Lawrence 3; Lee 2; Livingston 3; Logan 1; Macon 4; Macoupin 25; Marion 4; Marshall 2; Mason 1; Massoc 2; McDonough 1; McHenry 4; McLean 13; Menard 1; Mercer 5; Monroe 4; Montgomery 7; Morgan 1; Moultrie 1; Ogle 4; Peoria 14; Perry 3; Piatt 1; Pike 6; Pope 3; Putnam 1; Randolph 10; Rock Island 10; Saline 15; Sangamon 26; Schuyler 3; Shelby 7; Stark 2; St. Clair 29; Stephenson 6; Tazewell 5; Union 9; Vermillion 16; Wabash 1; Washington 3; Wayne 11; White 1; Whiteside 3; Will 4; Williamson 21; Winnebago 16; Woodford 2. Seven of these young men have died from tuberculosis since being discharged from military service.

MIDSUMMER MORBIDITY REPORT FOR STATE OF ILLINOIS

Venereal Diseases Lead

Smallpox Threatens Trouble in Fall Months

During the month of July 5563 cases of communicable diseases were reported to the State Department of Public Health from 196 different communities. Of the total cases reported Chicago had 4166, the other 1397 cases being distributed among 195 down state towns and cities.

Venereal diseases for the first time in the history of the State lead all other acute infections in number of cases reported. During the month 1056 cases were reported to the State authorities, 645 being gonorrhea, 360 syphilis and 51 chancroid. These cases were reported from 44 localities indicating an increasing appreciation and a more general observance of the rules requiring the reporting and control of the venereal infections. The report for August will show still further improvement in this respect.

Whooping cough with 1030 cases recorded stands in order of greatest prevalence. Chicago reported 598 cases, Evanston 257, Lake Bluff 37, Springfield 38 and Flora 53, the other cases being distributed among fourteen other communities.

The presence of 101 cases of smallpox in 38 communities at this season of the year is indeed disquieting and is held as promising a serious situation with the onset of cooler weather if preventive measures are not undertaken in the meantime. It is of the utmost importance with the opening of schools in September that every pupil be examined as to vaccinal status and that extraordinary pressure be brought to bear on the parents of all unprotected children to have them vaccinated without further delay. School authorities and citizens generally should regard it their patriotic duty to avail themselves of this simple means of preventing a situation which may seriously interfere with the mobilization and training of our troops.

Typhoid fever, the presence of which is a shame and a disgrace to any community, claimed 213 cases in July and as shown by current records a considerably larger number in August. Forty-three different communities reported the presence of this filth disease in July. The City of Moline reported 106 cases,

Jacksonville 12; Danville 5; North Chicago and Waukegan 5; Neoga 6, and Chicago 28.

Diphtheria was reported from 42 communities, a total of 486 cases, 358 of which occurred in Chicago, 16 in Roodhouse, Greene County, and 18 in Brookport, Massac County—9 in one family.

Poliomyelitis (infantile paralysis) appeared in 19 different localities with a total of 43 cases. The areas chiefly affected were Jo Daviess, Kane and Kankakee counties and the City of Chicago.

Scarlet fever was at low ebb in July, there being but 153 cases in the State, 101 in Chicago and the remainder scattered among 26 down state communities.

Following is a summary of the communicable disease reports for July, showing the Chicago and down state totals and the number of communities affected.

COMMUNICABLE DISEASES REPORTED TO STATE DEPARTMENT OF HEALTH DURING MONTH OF JULY, 1918.

	Chicago	Down State	Total	Number Localities Affected
Cerebrospinal fever	21	1	22	2
Chickenpox	169	2	171	1
Diarrhea and enteritis	1	...	1	1
Diphtheria	358	128	486	42
Diphtheria carriers	90	...	90	1
Erysipelas	29	...	29	1
German measles	33	1	34	2
Infantile paralysis	17	26	43	19
Measles	200	69	269	25
Mumps	63	13	76	8
Ophthalmia neonatorum	15	2	17	2
Parotyphoid fever	3	1	4	2
Pneumonia	140	...	140	1
Puerperal fever	6	...	6	1
Scarlet fever	101	52	153	27
Smallpox	10	91	101	38
Streptococcus sore throat	2	...	2	1
Tetanus	4	...	4	1
Trachoma	4	5	9	4
Tuberculosis	1,467	132	1,599	41
Typhoid fever	28	185	213	43
Whooping cough	598	432	1,030	19
Venereal Diseases:				
Syphilis	292	68	360	18
Gonorrhea	471	174	645	18
Chancroid	36	15	51	7
All others	8	...	8	1
Totals	4,166	1,397	5,563	198

Correspondence

COUNCIL OF NATIONAL DEFENSE

MEDICAL SECTION

WASHINGTON, D. C.

August 12, 1918

ENROLLMENT OF PHYSICIANS

To the Editor:

1. On August 8th the following statement was authorized by the War Department, signed by Newton D. Baker, Secretary of War:

"The War Department today has suspended further volunteering and the receipt of candidates for officers' training camps from civil life. This suspension will remain in force until the legislation now pending before the Congress with regard to draft ages is disposed of and suitable regulations drawn up to cover the operation of the selective system under the new law. * * *"

Fearing that this order might be misinterpreted by doctors who would not distinguish between enlistment as a private soldier and enrollment as an officer in the Medical Reserve Corps, on August 9th, I asked the Secretary of War to issue a statement making clear this point.

2. In response to this request on August 10th the following statement was authorized by the War and Navy Departments:

"Orders issued by the War and Navy Departments on August 8th suspending further volunteering and the receipt of candidates for officers' training camps from civil life do not apply to the enrollment of physicians in the Medical Reserve Corps of the Army and the Reserve Force of the Navy. It is the desire of both departments that the enrollment of physicians should continue as actively as before so that the needs of both services may be effectively met.

(Signed) JOSEPH DANIELS,
Secretary of the Navy.

(Signed) NEWTON D. BAKER,
Secretary of War."

3. It is desirable that the definite attention of the medical profesion be called to this interpretation in order that enrollment for the Medical Reserve Corps of the Army and the Reserve Force of the Navy, which is going on so rapidly at the present time, shall not be interrupted. Trusting that you will give this prominent space in the next issue of your JOURNAL and such editorial comment as you may deem desirable, I am

Yours very truly,

FRANKLIN MARTIN,

Chairman, General Medical Board.

STATE BOARD EXAMINATIONS

The following candidates were successful in the recent examination for physicians and surgeons held by the Department of Registration and Education:

Abraham, Edwin Dorsey, St. Luke's Hospital, Chicago.

Anderson, Richard Elseph, Michael Reese Hospital, Chicago.

Anderson, Roger Smedberg, 2901 Prairie Ave., Chicago.

Anderson, Truman Oliver, 11640 Yale Ave., Chicago.
Anderson, Victor Joseph, 5634 Ridge Ave., Chicago.
Ash, Simon, A. T. & S. F. Hospital, Topeka, Kas.
Bailey, Percival, Mercy Hospital, Chicago.
Barth, Walter James, 1124 Oakdale Ave., Chicago.
Beck, Karl M., 3537 Sheffield Ave., Chicago.
Begg, Harold Kohll, Michael Reese Hospital, Chicago.
Bell, Jerry S., 422 S. Hermitage Ave., Chicago.
Bernstorf, Warren Fred'k, Cook County Hospital, Chicago.
Berry, Ernest Lee, Michael Reese Hospital, Chicago.
Billingsley, Paul Raymond, Cook County Hospital, Chicago.
Birk, Benjamin Jaffee, 5040 St. Lawrence Ave., Chicago.
Bissekumer, Roger Martin, 1136 Crosby St., Rockford, Ill.
Brooks, Harry Lewis, Metropolitan Hospital, New York.
Brosiloff, Fanny S., 2012 W. Polk St., Chicago.
Brown, Lyle Leland, Michael Reese Hospital, Chicago.
Burcky, Fred'k Wm., 6641 S. Halsted St., Chicago.
Burke, James Walter, 2701 N. Mozart St., Chicago.
Calonge, Guy Earl, 1848 W. Adams St., Chicago.
Campbell, Duncan D., 4803 W. Madison St., Chicago.
Carpenter, Fred Elton, Reasner, Iowa.
Caylor, Harold D., 709 S. Ashland Blvd., Chicago.
Chamberlin, Frank T., Jr., 1323 M St. N. W., Washington, D. C.
Chapman, Meyer Joseph, 1045 N. Ashland Ave., Chicago.
Chimane, Eugene Opet, 1805 Clay Ave., Houston, Tex.
Claridge, John Daniel, Mercy Hospital, Chicago.
Colbert, Carter Noville, 1438 Jackson Blvd., Chicago.
Coldren, Cassius Milo, 1753 W. ongress St., Chicago.
Cole, Merion Ousley, 1361 E. 57th St., Chicago.
Collins, Harry Lambert, 27 E. Monroe St., Chicago.
Conley, David Oris, 115 W. Kent St., Streator, Ill.
Cooke, Harriett E., 4250 Van Buren St., Chicago.
Coppens, Jesse Brenton, 2444 Leland Ave., Chicago.
Copia, George H. J., Batavia, Ill.
Croson, Franklin Roy, 2923 Michigan Ave., Chicago.
Croutch, Benjamin F., 3819 Monroe St., Chicago.
Davis, Ethel Mildred, 5177 Michigan Ave., Chicago.
David, Loyal Edward, Galesburg, Ill.
Derian, Mardiros H., 1923 W. Adams St., Chicago.
Dickinson, Jasper Myrton, Cook County Hospital, Chicago.
Dry, Frank Mortimer, 820 Montrose Blvd., Chicago.
Dummer, William Martin, St. Joseph's Hospital, St. Paul, Minn.
Durr, Samuel Abraham, Cook County Hospital, Chicago.
D'Vorak, Albert Charles, Michael Reese Hospital, Chicago.
Eager, Benjamin F., 2901 Prairie Ave., Chicago.
Eisaman, Ralph Herbert, Cook County Hospital, Chicago.
Ellis, George Curtis, 3763 Wabash Ave., Chicago.
Elmer, William Hart, 921 East 42nd Pl., Chicago.
Enneis, Francis B., 338 Copeland St., Jacksonville, Fla.
Enos, Louis H., Alton, Ill.
Everhart, Arthur M., 11 W. Superior St., Chicago.
Feldott, Harry R., Batavia, Ill.
Fergusson, Frederick Wm., Michael Reese Hospital, Chicago.
Finney, Clarence E. McC., 709 S. Ashland Blvd., Chicago.
Fitzgerald, James P., Selfridge Field, Mount Clemens, Mich.
Flaten, Amon Peter, 3805 Monroe St., Chicago.
Foster, Samuel Thomas, St. Luke's Hosp., Chicago.
Fox, Breina, 3604 W. 15th St., Chicago.
Frederickson, Charles H., South Bend, Ind.
Frederickson, Harold C., South Bend, Ind.
Freund, Charles Anton, 3836 Byron St., Chicago.
Frey, Harry, Rock Island, Ill.
Furry, Abe D., Metropolitan Hospital, New York.
Ganyard, Ford Carter, 1531 W. Adams St., Chicago.
Gacht, Max, 629 So. Marshfield Ave., Chicago.
Goldfield, Bernard, 1432 W. 13th St., Chicago.
Gunning, Robert E. L., Galesburg, Ill.
Gustafson, J. Eric, 2814 Ellis Ave., Chicago.
Haag, Arthur Fred'k, 1515 W. Monroe St., Chicago.
Haan, George Wm., Jr., Aurora, Ill.
Haley, Clarence Q., 2141 S. Clinton Park Ave., Chicago.
Haralson, Edith M. P., Byron Center, Mich.
Healy, Roscoe H., Barnes Hospital, St. Louis, Mo.
Heck, Frank LeRoy, 2100 Burling St., Chicago.
Hediger, Edward, 1433 N. Claremont Ave., Chicago.
Hennan, Clarence W., 6450 Drexel Ave., Chicago.
Heumann, Johanna, 4520 Grand Blvd., Chicago.
Hoag, Howard Carlisle, Oak Park, Ill.
Hornberger, August F., Baldwin City, Kan.
Houghton, Elgie M., 615 S. Wood St., Chicago.
Hoyme, Gjermund, Mercy Hospital, Chicago.
Huber, Paul Robert, 1000 Diversey Parkway, Chicago.
Ives, Warren Chamberlain, Pecatonica, Ill.
Johnson, George Emel, 1908 W. Jackson Blvd., Chicago.
Johnson, Iven G., 5437 W. Van Buren St., Chicago.
Jones, Orion Chester, General Hospital, Rochester, N. Y.
Kamm, Adolph Kavier, Metropolitan Hospital, New York.
Kaplan, David, 702 S. Ashland Blvd., Chicago.
Keeler, Kenneth Blake, St. Luke's Hospital, Chicago.
Kemper, Malcolm, Phila. Gen'l Hosp., Philadelphia, Pa.
Kennedy, Josephine, 2224 Washington Blvd., Chicago.
Kornder, Louis Henry, Davenport, Iowa.
Kramer, Florence R., 1919 W. Congress St., Chicago.
Kramer, Morris D., 629 So. Marshfield Ave., Chicago.
Kultus, Theodore, 2507 W. Division St., Chicago.

Lash, Abraham L., 1826 So. Avers Ave., Chicago.
Laury, Charles McCray, 1336 Newberry St., Chicago.
Levy, David Mordecai, Cook County Hospital, Chicago.
Lewis, Marian, Milwaukee, Wis.
Loar, Ralph Rinehart, Glencoe, Ill.
Lommen, Peter Arnold, 709 S. Ashland Blvd., Chicago.
Loving, Luther Wilbur, St. Luke's Hospital, Chicago.
Lutton, Ethelbert A., 7849 Normal Ave., Chicago.
Lyon, Floy E., 605 S. Ashland Blvd., Chicago.
MacDougall, Andrew S., 1832 W. Adams St., Chicago.
Macdonald, Hugh, Peoria, Ill.
MacAuliffe, Joseph P., 1248 S. Kedvale Ave., Chicago.
Mahle, Arthur Edwin, Rochester, New York.
Maury, Leo Gernand, Michael Reese Hospital, Chicago.
Maxon, Earl Dwight, 15 So. Honore St., Chicago.
Mazel, Maurice S., 911 S. Halsted St., Chicago.
McCurdy, Russell James, Glencoe, Ill.
McHaffie, Orval L., Michael Reese Hospital, Chicago.
McKeown, Charles D., 118 S. Winchester Ave., Chicago.
McWilliams, William B., 2923 Michigan Ave., Chicago.
Mercy, Raymond John, 1458 Jackson Blvd., Chicago.
Meyer, Martin L. D., 2646 Calumet Ave., Chicago.
Miller, Arthur Lewis, 710 S. Lincoln St., Chicago.
Miller, Max Mayo, Kansas City, Mo.
Mohr, George Joseph, 702 S. Ashland Blvd., Chicago.
Morrison, Richard John, 118 S. Winchester Ave., Chicago.
Mott, Neva Grosh, 3736 W. 64th St., Chicago.
Murphy, Thomas N. B., U. S. Naval Hosp., Lake Forest, Ill.
Nagle, Richard A., 209 N. Long Ave., Chicago.
Newbecker, Cecil George, Los Angeles County Hospital, Los Angeles, Cal.
Nex, Henry A., Detroit, Mich.
Nyvell, Harry O. J., 3257 Foster Ave., Chicago.
O'Conor, Vincent John, Ottawa, Ill.
Ohlendorf, Clarence, Park Ridge, Ill.
O'Neill, Joseph Thomas, Illinois Steel Co. Hosp., Joliet, Ill.
Orcutt, Arthur Henry, U. S. Naval Hosp., Lake Forest, Ill.
Paine, Norman Carr, 4224 Langley Ave., Chicago.
Parowski, Victor B., St. Anthony's Hosp., Chicago.
Pember, Aubrey H., Augustana Hospital, Chicago.
Perkins, Chester Henry, Ill. Steel Co. Hosp, Joliet, Ill.
Petritz, Louis James, Mercy Hospital, Chicago.
Piaseczynski, Francis, Cleveland, Ohio.
duPlessis, Jean, 525 S. Ashland Blvd., Chicago.
Pomrenze, Herman M., 1431 W. 14th St., Chicago.
Portis, Sidney A., 5140 Michigan Ave., Chicago.
Power, John Edward, St. Luke's Hospital, Chicago.
Przygocki, Stanley F., 2804 Logan Blvd., Chicago.
Rapp, Edwin Wallace, 1832 W. Adams St., Chicago.
Reich, Stanley Henry, 3003 Allen Ave., Chicago.
Roark, George L., Hawarden, Ia.
Roewe, Henry Joseph, Michael Reese Hosp., Chicago.
Rongetti, Amante, 923 Blue Island Ave., Chicago.
Rosenberg, William A., 2653 Potomac Ave., Chicago.
Ross, Ellison Lloyd, Cashmere, Wash.
Rossyn, Isadore M., 3515 W. 12th St., Chicago.
Rowley, Walter Nelson, 1336 Newberry St., Chicago.
Rubin, Martha, 1845 W. Taylor St., Chicago.
Rutz, Reinhold Albert, 1256 No. Harding Ave., Chicago.
Sauer, Henry Charles, 709 S. Ashland Ave., Chicago.
Schlossmann, Bernard, 702 S. Ashland Ave., Chicago.
Schneider, Philip Frederic, Freeport, Ill.
Schoon, Theodore George, Buffalo Center, Ia.
Sexsmith, Edna Kathryne, 705 S. Ashland Blvd., Chicago.
Sherman, Borris J., Michael Reese Hosp., Chicago.
Simpkin, John Mark, Cook County Hosp., Chicago.
Sladek, Edward Frank, Michael Reese Hospital, Chicago.
Smith, Arthur Ervin, 210 S. Lincoln St., Chicago.
Smith, Chas. Enion, 3124 Logan Blvd., Chicago.
Smith, Dale DeWitt, 1336 Newberry Ave., Chicago.
Smith, Herchel, Wesley Hospital, Chicago.
Sokoloff, Anna, 836 S. Lincoln St., Chicago.
Steffens, Georgia Wetmore, 435 E. 44th St., Chicago.
Stogadill, Grace Scott, 2901 Washington Blvd., Chicago.
Stoll, Henry G., Hinsdale, Ill.
Strikol, Michael Thomas, West Side Hosp., Chicago.
Tashma, Sigmund Schaia, 2107 S. Turner Ave., Chicago.
Taylor, Arthur Clyde, Wilmette, Ill.
Taylor, Charles Fletcher, 7528 Saginaw Ave., Chicago.
Thomas, Clyde Samuel, Cincinnati Gen'l Hospital, Cincinnati, Ohio.
Thompson, John Clark, Cook Co. Hosp., Chicago.
Tichy, Ladislav Sala, 3200 W. 22nd St., Chicago.
Tierney, George Francis, 3729 So. Morgan St., Chicago.
Tihen, Henry Nelson, 323 S. Ashland Blvd., Chicago.
Troy, John Edward, 622 Aldine Ave., Chicago.
Turley, Vigo T., Galllveston, Ind.
VanDuine, Wesley, Hahnemann Hospital, Chicago.
Verbryck, George Garrison, Presbyterian Hospital, Chicago.
Wagoner, Guy Leon, Augustana Hospital, Chicago.
Waldorf, Clifford Earl, Mitchell, So. Dak.
Wallace, James Houston, Sandwich, Ill.
Waldmann, Louis Francis, 221 So. Ashland Blvd., Chicago.
Waltz, Manford Repp, Victoria, Mich.

Weishaar, Herman Oliver, Evanston Hospital, Evanston, Ill.
West, Ray Augustine, St. Luke's Hosp., Chicago.
Williams, Rutherford M., 3400 Forest Ave., Chicago.
Woolson, Clement, St. Paul, Minn.
Worsley, Edgar Field, Oak Park, Ill.
Worley, Eugene, St. Anthony's Hospital, Chicago.
Wojczynski, Aloysius J., 1618 N. Marshfield Ave., Chicago.
Wright, Bert Mathias, Washington, D. C.

Personals

Dr. C. E. Howard, Lewiston, has removed to Peoria.

Dr. H. J. Gahagan has removed from Elgin to Chicago.

Dr. P. B. Goodwin has removed from Summum to Peoria.

Dr. H. D. Steele has removed from Princeton to Long Beach, Cal.

Dr. Henry I. Wilson, Oak Forest, has been appointed health officer of Racine.

Dr. Albert Mowry, Chicago, has been assigned to active duty, and has been ordered to Syracuse, New York.

Dr. Carl E. Black, Jacksonville, has been appointed a member of the medical division of the Illinois state council of defense.

Dr. S. Claude Andrus has been appointed chief surgeon for the Chicago, Milwaukee and Gary Railroad, with headquarters at Rockford.

Dr. A. J. Hruby has been appointed medical superintendent of the Municipal Tuberculosis Sanitarium in place of Dr. Watterson.

Dr. George F. Richey, Bushnell, has been commissioned first lieutenant, U. S. Naval Reserves.

Drs. Mary M. S. Johnstone and Loretta K. Maher, of Chicago, have been appointed on the staff of the war emergency dispensary in Washington.

Dr. Edwin C. Williams, physician to the late James C. King of Chicago, was a witness in the contested will case to dispose of the estate of $3,000,000.

Dr. H. G. Reinhardt, Chicago, coroner's physician for Cook county, is a candidate for state senator in the 25th senatorial district on the republican ticket.

Dr. H. J. Haiselden, Chicago, is said to have been sued for $35,496.55 by the Hennepin Film Company over an alleged contract re the film, "The Black Stork."

Dr. Robert C. Bourland, Rockford, formerly major surgeon of the Third Infantry, Ill. N. G., was elected chairman of the west side selective service board, July 18.

Dr. A. F. Stewart, Oneida, lieutenant at Camp Dodge, has received an honorable discharge from service on account of physical disabilities existing prior to his enlistment.

The Adams County Medical Society reported a picnic at Arion park, August 13. The only criticism noted was made by Dr. Wheelock who did not approve dividing one chicken between two doctors. What do you mean, chicken?

Capt. Francis E. Locy, of Evanston, was reported gassed at Chateau Thierry, while dressing the wounded for thirty hours. The gas destroyed his clothes so that he arrived at the base hospital in pajamas, helmet and boots.

The following Chicago physicians have received commissions in the Medical Reserve Corps: Captain John E. Stanton; Lieutenants, Abraham I. Eppstein, Frank J. Quirk, Richard A. Roche and Clarence Wieneke.

Dr. A. Lagorio, Chicago, has received acknowledgment of the receipt in Italy of 10,000 liras subscribed in Chicago for relief work in the Italian trenches. July 20 the Chicago Italian Red Cross sent 125,000 liras to found an institution for the orphans of refugees.

The following Springfield physicians have received commissions: Captains, M. R. C., Chas. W. Compton, Irving Metz, Robert E. Flentje, Hugh T. Morrison and Albert R. Trapp; First lieutenants, David Lockie, G. J. Mautz, S. D. Zopf, H. K. Southwick and Edgar D. Smith.

Bushnell, according to the *Record*, has contributed more than 50 per cent. of the Medical Corps of McDonough County and more than 25 per cent. of the soldiers of the county. The Bushnell medical men in the service include Drs. G. R. Blackstone, J. C. Griffith and S. Duntley, and Dr. Geo. F. Ritchey is a lieutenant in the Navy.

News Notes

—The Base Hospital Unit No. 14, St. Luke's Unit, was announced, August 2, to have been safely landed in Europe. Capt. Lawrence H. Mayers, M. R. C., U. S. Army, is director of the unit.

—At the international convention of the Catholic Order of Foresters, held in Duluth, July 29, Dr. Joseph P. Smyth, Chicago, was eleceted high medical examiner.

—The name of the Memorial Institute for Infectious Diseases, founded in memory of John Rockefeller McCormick, has been changed to the John McCormick Institute for Infectious Diseases.

—Boone county is the 34th Illinois county to form a tuberculosis association. The prospect of having soldiers invalided home on account of tuberculosis is stimulating organizations to provide sanitaria for the coming need.

Capt. Wm. F. Scott, of Fort Sheridan, is said to have started suit for $15,000 against John J. Arnold, vice-president of the First National Bank of Chicago, for services in amputating his feet. It is stated that Mr. Arnold collected $154,000 accident insurance.

—The Department of Registration and Education of Illinois has secured a conviction against F. Zegsda in the Municipal Court of Chicago, and suit was filed against Jeb Maddox, East St. Louis, for practicing medicine without a license. Zegsda was fined $100 and costs.

—The association of Misercord of the Heber Memorial Hospital, Pana, gave a dinner at the hospital, July 25, in honor of the physicians who have been called into United States service. The guests of honor were Drs. Roscoe C. Danford, Walter Burgess, and Frederick J. Eberspacher. Dr. John F. H. Deal, Springfield, was toastmaster.

—At a meting of the Illinois Department of Registration and Education, held August 19, according to report, the licenses of the five following physicians were revoked: William Lewis LeBoy and James Russell Price of Chicago, Samuel Ringgold Harwood of East St. Louis, Edward E. Rohrabaugh of Hanna City and William L. Owen. The last named is at present serving a term in the Federal Prison at Atlanta, Ga., for illegally prescribing narcotics. Since his conviction in New York his licenses in New York, Pennsylvania, California and now in Illinois have been successively revoked.

—The following Illinois physicians have been commissioned in the Medical reserve corps and have reported as indicated:

First Lieut. Earl Meister, Chatsworth—Fort Riley, Kansas.

First Lieut. C. W. Rutherford, Newman—Ft. Oglethorpe, Ga.

Captain H. G. Wright, DeKalb.

First Lieut. H. W. Ackerman, Elgin.

Capt. James A. Howell, Elgin—Ft. Oglethorpe, Georgia.

Major Charles J. Swan, Evanston—Camp Wheeler, Georgia.

Capt. G. W. Boot, Evanston—Camp Pike, Ark.

Capt. T. J. Williams, Evanston.

Capt. R. N. Lane, Gibson City.

First Lieut. B. A. Cottlow, Oregon.

First Lieut. H. D. Eaton, Harvard—Fort Riley, Kansas.

Lieutenant C. D. Snively, Ipava—Ft. Oglethorpe, Georgia.

First Lieut. John H. Edgcomb, Ottawa—Base hospital, Macon, Ga.

Capt. B. F. Hockman, Summer—Ft. Oglethorpe, Georgia.

First Lieut. W. L. Crouch, Fairview—Camp Mead, Maryland.

Capt. Wm. Schoenneshoefer, Lostant.

Capt. Arvid E. Koehler, Moline—Ft. Oglethorpe, Georgia.

Capt. Clinton E. Powell, Polo.

Capt. Everett H. Butterfield, Ottawa—Tuberculosis camp, New Haven, Ct.

First Lieut. A. E. Hubbard, Peoria.

Lieut. H. C. Loveless, Griggsville—Camp Greene, North Carolina.

Capt. R. E. Stevens, Rochelle—Ft. Oglethorpe, Ga.

First Lieut. Ackerman, Rockford.

Capt. W. R. Fringer, Rockford—Ft. Oglethorpe, Georgia.

Lieut. F. M. Davenport, Rock Island.

First Lieut. V. M. Corman, Pleasantview—Base hospital, Camp Upton, N. Y.

Capt. H. O. Munson, Rushville—Camp Taylor, Ky.

First Lieut. J. A. McGee, Virginia—Ft. Oglethorpe, Georgia.

First Lieut. W. R. Blackburn, Virginia—Ft. Oglethorpe, Ga.

Capt. E. B. Packer, Toulon.

Major Roy H. Garm, Beardstown—Camp Sherman.

First Lieut. W. E. G. Mayes, Dawson.

First Lieut. H. B. Willcockson, Illiopolis.

Lieut. Geo. T. Meacham, Taylorville—Ft. Oglethorpe, Ga.

Capt. G. H. Moore, Aledo.

First Lieut. C. E. Smeltzer, Aledo.

First Lieut. J. W. Ovitz, Genoa—Camp McClelland, Alabama.

First Lieut. Henry Goodyear, Norton—Camp Sherman, Ohio.

Capt. T. C. Hays, Canton—Ft. Oglethorpe, Georgia.

Lieut. L. C. Knight, Carthage—Ft. Oglethorpe, Georgia.

Marriages

GEORGE B. ALLEN, to Miss Mame Hrdlicka, at Cary, July 17.

FRED J. SMITH, of Farmington, to Miss Fern Arnett, of Canton, at Cantom, recently.

JOHN CLOYD SOUDERS to Miss Clara Traenkenschuh, both of Rock Island, Ill., July 22.

J. HARRISON GRIFFIN, Chicago, to Miss Cleo Dale Latimer of Asheville, N. C., at Jacksonville, Fla., recently.

CAPT. EDWIN FREDERICK HIRSCH, M. R. C., U. S. Army, Chicago, on duty at Camp Grant, Rockford, Ill., to Miss Marian Sharp Lane of Beverly Hills, Chicago, August 3.

CAPT. WILLIAM DAVISON NAPHEYS, M. R. C., U. S. Army, Chicago, on duty with the American Expeditionary Forces, France, to Mrs. Alberta M. Finch of Chicago, recently.

CAPT. ROBERT SIXTUS BERGHOFF, M. R. C., U. S. Army, Chicago, stationed at Camp Grant, Rockford, Ill., to Miss Mary Elizabeth Ford of Chicago, August 10.

LIEUT. JOHN HARRISON ALEXANDER, M. R. C., U. S. Army, Pitsburgh, on duty at Camp Grant, Rockford, Ill., to Miss Marie Christine Myers of Rockford, Ill., July 10.

Deaths

CLARENCE A. WARWICK, Chicago; Hospital College of Medicine, Louisville, Ky., 1898; aged 45; a veteran of the War with Spain; who later had Philippine service; died at his home, July 22, from heat prostration.

SAMUEL ORR LOUGHRIDGE, Peoria, Ill.; Jefferson Medical College, 1866; College of Physicians and Surgeons in the City of New York; 1870; aged 79; died at the home of his son, at Germantown, Philadelphia, July 21.

ROBERT WILLIAM MARKLEY, M. D., Winnebago and Rockford, Ill., Northwestern University Medical College, Chicago, 1898, a prominent surgeon, died July 28 at Belcidere Public Hospital, Belvidere, Ill., from acute nephritis, aged 46 years.

HENRY KNAPPENBERGER, Macomb, Ill.; Rush Medical College, 1881; aged 67; a Fellow of the American Medical Association and past president of the McDonough County Medical Society; died at his home, July 1, from disease of the gall bladder.

SAMUEL CALHOUN STEMMEL, Macomb, Ill.; College of Physicians and Surgeons, Chicago, 1889; aged 55; a fellow of the American Medical Association; surgeon in chief of the Marietta Phelps Hospital, Macomb; a member of the Macomb board of health for twenty years; died at his home, July 24, from carcinoma of the pancreas.

HELEN CRITTENDEN, Evanston, Ill.; Northwestern University Woman's Medical School, Chicago, 1894; organizer and director until her death of the Social Service Registration Bureau of the Chicago Bureau of Charities; president of the Social Service Club in 1913, and a lecturer in the Chicago School of Civics and Philanthropy; died at her home, August 15.

GEORGE EDWARD FELL, Chicago; University of Buffalo, 1882; aged 68; a Fellow of the American Medical Association; flho was the first to save human lives by means of mechanical respiration, thirty-one years ago, as the result of experiments on animals which he conducted when professor of physiology in his alma mater; who also conducted the scientific experiments which resulted in 1890 in the construction of the electric chair for use in capital punishment, and whose most recent invention was an apparatus whereby an individual may remain under water a considerable time without danger; one of the founders and at one time president of the American Microsopical Society; a Fellow of the Royal Microscopical Society of England; died at his home, July 29, from dilatation of teh heart.

CAPT. MAXIMILIAN JOSEPH HERZOG, M. R. C., U. S. Army, Chicago; Medical College of Ohio, Cincinnati, 1890; aged 50; a Fellow of the American Medical Association; a pathologist of high rank; dean and professor of pathology, bacteriology and hygiene in Loyola University; who was commissioned captain in the Medical Reserve Corps, April 19, 1917, and honorably discharged for physical disability, April 24, 1918; author of a Textbook on General and Comparative Pathology; pathologist to the German and Maurice Porter hospitals; once president of the Chicago Pathological Society; in 1902-1903; for many years professor of pathology in the Chicago Polyclinic, and later director of the United States Government Laboratories, Manila, P. I.; director of laboratories and research at the Municipal Tuberculosis Sanatorium since 1916; died in that institution, August 9, from chronic interstitial nephritis.